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THE MEDICAL CERTIFICATE OF THE CAUSE OF DEATH.

BY

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HAVING kept nearly all the "counterfoils" of the certificates of the cause of death since the beginning of my practice, many years ago, I thought it would be worth while to classify them and record the results, and thus give an idea respecting the nature and comparative numbers of the fatal cases met with in an average general practice, as well as some points of collateral interest which will have presented themselves in the course of my calculations; but I am afraid that my statement will be chiefly numerical, and, that although of some interest, I can hardly hope to extract much from it that will prove to be of scientific or practical value.

It must be borne in mind that this series contains only my own patients, and none of the many whom I have been called to see in consultation with other medical

men, from whom the necessary certificates were obtained; and thus it is that cases of accident or hernia or urinary extravasation or other surgical fatalities are almost entirely absent: and although my practice has largely dealt with surgical cases, it will be noticed that only a very small minority appears here; and at the same time it must be remembered that they are more curable than those usually described as medical.*

The entire number is 426—that is, about ten for each year, supposing the years to have been equally busy, which, of course, was very far from being the case, and I have arranged them in ten tables, the first of which gives the proportionate numbers as to sex and age, and the others record the diseases, for the most part in the order of the "Nomenclature of Disease." I have added a few remarks after each, and have avoided as much as possible any reference to symptoms or treatment, as being foreign to a paper intended to be entirely pathological.

TABLE No. I.

Ages.	No.	Males.	Fem.	Percentage. Males.	Fem.
Under 3 months	10	5	5	50	50
3 to 12 months	7	4	3	57	43
1 to 2 years	10	5	5	50	50
2 to 5 ,, ...	15	8	7	53	47
5 to 10 ,, ...	11	7	4	64	36
10 to 20 ,, ...	24	11	13	46	54
20 to 30 ,, ...	15	6	9	40	60
30 to 40 ,, ...	18	6	12	33	67
40 to 50 ,, ...	33	20	13	61	39
50 to 60 ,, ...	48	18	30	38	62
60 to 70 ,, ...	78	30	48	38	62
70 to 80 ,, ...	90	34	56	38	62
80 to 90 ,, ...	56	13	43	24	76
90 to 100 ,, ...	11	3	8	27	73
	426	170	256	39.5	60.5

* These calculations do not include any deaths during the last three years.

From this table it appears that out of the whole number 170 were males and 256 were females, or as nearly as possible two to three, which appears a large difference: but we must bear in mind the fact that where I live, and have been living for three quarters of the time under consideration, the disparity of the sexes is almost, if not quite, the largest in England; for, according to the census of 1871, in all England the numbers were 48.5 males to 51.5 females, in the Clifton Union they were 44 to 55, in the St. Paul's (Clifton) district the disparity was even greater, and in my certificates it was 40 to 60.

In putting together the materials for this table an interesting point appeared, which however is not more than might be expected, viz., that as I have grown old, so have my patients, and whereas the average age at which the first fifty died was 28, the average age of the last fifty was 64, a much greater difference than one would have anticipated: and of those who died under 50 years of age, the number of males and females was nearly equal, *i.e.* 72 males to 71 females; while above 50 years of age the number of the women was nearly double that of the men, viz., 185 to 98. The average age of all was 54, and as many as 157 out of 426 died above the age of 70.

TABLE No. II.

General Diseases	54
Diseases of the Nervous System	72
,, ,, Circulating System	32
,, ,, Respiratory ,, ...	108
,, ,, Digestive ,, ...	57
,, ,, Urinary ,, ...	24
Cancer	58
Accidents and Miscellaneous Cases	21
Total	426

This table merely shows the number of deaths under each head, as nearly as possible according to the set of organs in which the disease was seated, excluding however all forms of cancer, which, from the special interest attached to the subject, I have made into a separate class by itself; and very many *post mortem* examinations were made, especially in the earlier half of the time included in these returns.

TABLE No. III.

General Diseases.	
Scarlatina	9
Typhoid	8
Smallpox	1
Typhus	1
Cholera	1
Puerperal Fever	2
Gout	1
Melanosis	1
Tuberculosis	1
Marasmus or Atrophy	5
Old Age	24
Total	54

In this list the proportion of deaths from zymotic diseases to the entire number of deaths is twice as great as that shown in the annual report of the medical officer of health for Bristol in the year 1887, which difference may be due to the fact that in his report there are, of course, very many other causes of death which do not occur in my practice; and my whole number is not large enough for a satisfactory comparison.

The case of cholera was that of the head master of the old Grammar School, in Unity Street, who was seized with his first symptom in the early morning of October the 14th, 1854, and died in the afternoon of the same day.

He was one of the victims of an outbreak of most virulent cholera in the district supplied by water from Jacob's Wells, which was afterwards found to be contaminated by sewage from Clifton; the special infection being most probably from a fatal case which had occurred a few days before in the immediate neighbourhood of Meridian Place.

I have never had a fatal case of measles.

The subject of melanosis was an unmarried lady, aged 34, who, two years before I saw her, when she was living in the North of England, had a small tumour removed by operation from the hip, near the great trochanter. She came to me complaining of swelling and pain in the lower part of the body; and upon examining her I found numerous black swellings, of various sizes from that of a shot to a broadbean, occupying the lower part of the abdomen and the external organs of generation. They increased very rapidly in number and size, extending down the thighs and over half the abdomen, and began to exude a fetid discharge, under which she soon sank. The appearance of the body after death was most remarkable.

Two of the cases of "marasmus or atrophy" were really cases of "debility from birth" in infants a few days old, in which there was not vitality enough to let the child live.

The cases returned as death from old age were those where there was no special disease capable of destroying life, but the patients sank away from senile feebleness; and yet there was in some a sign of some other ailment. Thus one is entered as "old age and herpes"; another as "old age and torpid bowels"; and sixty-seven of the entire number of the deaths were in persons above 80 years of age.

TABLE No. IV.

Diseases of the Nervous System.	
Paralysis, Cerebral Softening, and Disease of the Base of the Brain	19
Epilepsy	1
Apoplexy	25
Tumour of the Brain	5
Meningitis	5
Paraplegia	2
Cerebritis (Acute)	3
Cerebritis (Chronic)	8
Dementia and Exhaustion	2
Hydrocephalus	2
Total	72

The case of epilepsy was one of unusual character and interest. The patient was a poor basketmaker, in his 71st year, who had been epileptic since his 14th year, and quite blind and very deaf during that space of 57 years. He never had less than three fits in the day, often very many more; and when he felt the attack coming on, he would sit down on the floor with his back against the wall, and remain until he recovered himself. One day, instead of recovering, he remained insensible, and died in two days of apoplexy. At the *post mortem* examination I found the falx cerebri ossified in a thick mass, marked by the sulci and convolutions of the brain. In the upper part of the left hemisphere were two deposits of bone, like hard cancellous structure, as large as a nut, imbedded in the substance of the brain; another larger one, more deeply seated; and a fourth, which seemed to grow by a pedicle attached to the petrous bone. The ventricles were full of blood and clots, the immediate cause of death. This man probably had sixty thousand fits.

Two of the instances of tumour of the brain were in young children, where the disease seems to have followed

an injury. The morbid growths (one as large as a filbert, the other the size of a walnut) were imbedded in the cerebral substance near the base, and they were formerly called tubercle of the brain; now the word Glioma is used.

TABLE No. V.

Diseases of the Circulating System.	
Diseased Heart and Kidneys	9
Diseased Heart	10
Ditto with Dropsy	5
Ditto with Syncope	2
Ditto with Anæmia	1
Embolism	2
Ruptured Aorta	2
Fatty Heart	1
Total	32

Under the general head of "Diseases of the Heart," a diagnosis sufficiently precise for the registrar, are comprised cases of pericarditis with effusion, angina pectoris, pneumonia and pericarditis in the same subject, and a case of phlegmon and sphacelus of the leg from feeble heart-action; and one case of sudden death in a lady, who had suffered from weak heart, was marked "palpitation of the heart," from what had been a prominent symptom before.

Respecting the nine cases of disease of the heart and kidneys, there is nothing recorded to determine what organ was first affected: that there are frequently heart-symptoms before there is any reason to suspect the kidney is quite clear; and as the disease progresses the albumen suddenly makes its appearance.

In both the cases of rupture of the aorta, the blood escaped into the pericardium through a straight rent. Both were men, as is nearly always the case, and one was 58 and the other 70 years of age.

TABLE No. VI.

Diseases of the Respiratory System.	
Tubercular Phthisis	33
Pleuro-pneumonia and Hydrothorax	5
Pneumonia	21
Bronchitis	10
Bronchitis Senilis	27
Emphysema	2
Croup	1
Asthma and Bronchitis	4
Diphtheria (Laryngeal)	1
Hæmoptysis	3
Contracted Trachea	1
Total	108

These diseases are, in our climate, by far the most numerous and fatal of all. My proportion to the whole number is about one in four deaths; and in the registered returns for Bristol last year the proportion was rather greater, viz., one in three and a half; and in the numerous class, phthisis, the number was *thirty-three*, or one in every thirteen deaths—which is, within a very small fraction, the same rate as that which is returned by our medical officer of health for the whole district. A large number came under the head, "Senile Bronchitis;" and when I state that the average age of these twenty-seven persons was 78 years, it will be fair to consider that the "Anno Domini" had as much to do with the fatal result as the bronchitis.

Although many of the phthisical cases had the complication of occasional hæmoptysis in the usual progress of the malady, I have made a distinct class of the three cases which died in the act of bringing up blood. It is a terrible sight to stand by and witness a patient struggling to get his breath, while the rapid stream of florid blood is rushing from his mouth and nose, until he is speedily overpowered and suffocated, and to feel oneself perfectly powerless to help him.

The case of "contracted trachea" was not my patient originally. The subject of it had worn a tube in his windpipe for several years, and had suffered occasionally from difficult breathing during that time, apparently from narrowing of the trachea and extension downwards of the original disease of the larynx. I do not know if it was syphilitic, but it certainly was not cancer.

Pneumonia has been so common and so fatal a disease in my practice, that I always feel much anxiety about my cases, especially when there is evidence in the form of dulness and crepitus that both lungs are involved. Notwithstanding the preponderance of females in my general list, the number of deaths from pneumonia of males is nearly double that of females, because they are more exposed to cold and other influences likely to produce the complaint; and, besides seven children under five, they were all above 48 years of age—some of them men in the prime of life.

TABLE No. VII.

Diseases of the Digestive System.	
Peritonitis and Inflammation of the Bowels ...	8
Diarrhœa	5
Infantile Diarrhœa	5
Perforation of the Intestine	2
Strumous Ulceration of the Bowels	1
Dyspepsia	5
Perforating Ulcer of the Stomach	1
Intestinal Obstruction	2
Intussusception	2
Ileus	2
Obstruction from Tumour	2
Thickened Pylorus	1
Sphacelus of the Rectum	1
Imperforate Anus	1
Tabes Mesenterica	4
Chronic Hepatitis and Cirrhosis	6
Diseased Liver, with Jaundice and Dropsy ...	7
Abscess and Tumour of the Liver	2
Total	57

Of these cases of peritonitis, one was caused by a tumour of the abdomen, probably cancerous; and another, verified by *post mortem* examination, was a sudden attack in a gentleman aged about 50, coming on without any evident cause, unless it were cold from driving home at night in a damp cab. Another was a well-marked case of tubercular peritonitis.

In each of the cases of perforation of the intestine, the attack was very speedily fatal. One was male, the other female, both some way past the middle period of life, and in both the cause was excessive accumulation of hard fæcal matter in the bowels. In the case of the male there was a *post mortem* examination, and the whole large intestine was found blocked with heavy masses of hard and coherent fæces, which the peristaltic action of the bowels, aided by purgatives, was altogether unable to move; under such circumstances, the remedies only increased the perils of the patient.

The case marked "thickened pylorus" was in a young lady, generally active and bright, taken with persistent sickness; and at the *post mortem* examination, the only morbid condition to be found was a hard and thick state of the pylorus, which did not appear to be of a scirrhous nature.

One of the instances of intussusception was of a very remarkable and interesting kind. A healthy little boy, six years of age, was seized with violent abdominal pains, but was relieved, after a few hours, by a gentle purgative, which acted freely. Then the pain returned, and he was evidently suffering from ileus, or intussusception. He had a long illness of nearly six months, during which time he appeared once or twice to be moribund. He passed at times, *per anum*, sloughing pieces of intestine,

and also passed gas and fæcal matter through the urethra. He was kept alive at first by port wine and beef tea, and the communication between the bladder and bowel ultimately healed, and his bowels were freely and tolerably regularly relieved; but the evacuation was slate-coloured and greasy, with undigested fat and no trace of bile. He took half a bottle of port wine, and plenty of nourishing food; but he gradually wasted away until every particle of flesh and fat was removed from his body, and he died practically of starvation, although able to feed well. At the *post mortem* examination the parts were found much matted together; but it was clearly made out that communication had taken place between the duodenum and descending colon by means of a double circular loop of bowel, and that the greater part of his alimentary canal had been unused for the whole time of his illness, thus explaining his want of nutrition; and the healed communication with the bladder had taken the form of a narrow and solid cord.

One case marked "Intestinal Obstruction" was that of one of our local Artillery Volunteers, who had severe attacks of obstruction occasionally after riding upon a rough and shaking gun-carriage, and at last the condition proved fatal. At the *post mortem* examination the only peculiarities were, that a large quantity of the small intestine had slipped down into the pelvis, and there was some little difficulty in withdrawing it, although there was no actual adhesion; and a pin which he had accidentally swallowed some years ago was found lying loose in the peritoneal cavity in the pelvis.

Some of these cases, had they occurred now, would have been considered suitable for operation, and it is possible that some might have been relieved.

The child with imperforate anus lived for 101 days, I believe, the longest time recorded that a child has lived without any evacuation. The usual vomiting ceased after a short time, and it took a little milk daily. I made first of all an unsuccessful attempt to reach the bowel, through the mark where the sphincter seemed to exist; and then the mother refused to have anything more done. Colotomy would, doubtless, have saved the child's life for a time; but, probably, the mother did the best thing when she objected to further surgical treatment. The rectum, from the sphincter to the bottom of the sigmoid flexure, was a mere solid fibrous band.

The case marked "Sphacelus of the Rectum" was a frightful one of neglected prolapsus ani, which was strangulated and began to slough; and then a rapid sphacelus attacked the sphincter and flesh of the nates, so that the still spreading sloughs hung down from the body of the patient, who suffered intolerable agony, unrelieved by any measures we could adopt.

TABLE No. VIII.

Diseases of the Urinary System.	
Albuminuria	5
Ischuria renalis and Uræmia	8
Diabetes	5
Fungus Hæmatodes of the Bladder	1
Hæmaturia	1
Cystitis	1
Calculus Vesicæ (male)	1
,, ,, (female	2
Total	24

These albuminuria cases were for the most part closely allied to those in Table No. V., classed under the head "Diseased Heart and Kidneys," placed there

because the heart-disease was the most marked condition; whilst in these others the state of the kidneys was more obviously the cause of death.

Of the deaths from diabetes, one was in a girl aged 18, in whom the disease ran through a most rapid course, and she wasted away and died after a very short illness, being conscious to the last breath. Another, a middle-aged lady, became suddenly comatose one day, and never recovered her senses; while a third died of a slowly progressing paralysis, affecting the use of the limbs and the power of speech.

The patient with fungus hæmatodes of the bladder had very much the same symptoms as those produced by stone in the bladder. He went up to London and saw the surgeons most celebrated for the treatment of such complaints, and was sounded by myself and others; but no one knew exactly what was the matter with him until I made a *post mortem* examination, and then I found a rough, ulcerated, bleeding fungoid surface, extending over exactly half the bladder, leaving the other half comparatively free from disease.

The male subject of calculus vesicæ was 73 years of age, who became my patient shortly before his death, his former surgeon having decided to give up the case. He was in a weak and almost sinking state, and there was no period after he was under my care when he was well enough to bear an operation. At the *post mortem* examination I removed a handful of stones, varying from the size of a pea to that of a filbert.

One of the female stone cases was 75 years old, and suffered much from bronchitis; and the other, aged 77, had diseased kidneys, and the urine was so full of phosphates that it was deposited in crusts about the external

organs, and had to be removed occasionally; and the operation of clearing it all away was very painful.

The case of hæmaturia was stone in the kidney.

TABLE No. IX.

Cancer.	
Cancer of the Lip	1
,, Mouth	1
,, Tongue	2
,, Œsophagus	3
,, Stomach	1
,, Rectum	4
,, Breast	19
,, Uterus	3
,, Vulva	2
,, Eye	1
,, Neck	2
,, Brain	1
,, Arm	1
Intestinal Cancerous Tumour	7
Unrecorded	10
Total	58

In the registrar's returns for the city of Bristol for 1887, the deaths from cancer were one in every thirty-eight of the whole number of deaths: whilst in my own list they were as many as one in eight, or more than four times as frequent—so that I had more than my fair share of these most unsatisfactory cases. The proportion of the men to the women who died from this terrible malady under my care was about one man to three women, or one in four.

There is nothing very worthy of note respecting the ages at which death occurred: two were under ten years of age, none between ten and thirty-four, and then the number gradually increased with each decennial period; the number above seventy being greater than that of any other period of ten years.

My fatal case after operation for cancer of the lip, a proceeding generally considered to be entirely devoid of danger, was that of a gentleman, a dignitary of the Church, aged 72, on whom I operated in the usual way. The wound healed perfectly well, but a superficial sore line remained on the red part of the lip inside, and this was granulating and healing properly. He walked into Bristol one cold morning from the country-house where he was staying, and when he came back he had a rigor, followed by pyæmia and in a very few days by death.

Two out of three deaths from cancer of the œsophagus were in men; and I believe that the disease is more common in them than in women. It is very painful to treat these patients and to watch them day by day as they die of starvation. The female lived for a long time without any nourishment whatever, and became almost a skeleton in appearance. One of my male patients used to assuage the pangs of hunger, and of the complaint itself, by repeated doses of morphia, to which he had become so habituated that he took large quantities with impunity, but without much beneficial effect.

Patients with cancer of the rectum frequently live a long time after the disease is developed and recognised; and, as is the case with cancer of the other end of the alimentary tube, their sufferings are very great. In diseases of the rectum, whether cancerous or not, I have always noticed that there is a peculiar dread and anxiety, and an exaggerated idea of the amount of disease present, far more than is found in a corresponding amount of disease in any other organ.

With the exception of operations on the eyes, I have been called upon to perform operations on the female

breast for cancer or other tumours more often than any other, in private practice. I do not remember to have had a fatal case among the many operations of this kind that I had at the Bristol Infirmary during the twenty years to which my term of office as Surgeon was, by the rules then in force, restricted; but among the cases brought together in this table under the head of "Cancer of the Breast," no less than three such deaths occurred, the particulars of which I wish briefly to record.

The first was an undoubted case of pyæmia. The patient was nearly well, and the wound healed all but a small, healthy-looking, granulating surface, when she had a rigor, the precursor of fever, and deposits of pus in the joints and tissues, and speedy death, from what used to be called "absorption of pus." At the present time a free use of disinfectants might possibly have prevented such a sad end to a very promising case.

The second death occurred in the person of a lady living a short distance out of Bristol, and took place about the time of the first introduction of carbolic acid as a disinfectant. I took over and left in the house a four-ounce bottle of pure carbolic acid, that I might put a few drops in the water when the wound was dressed and the part bathed. The case went on fairly well, but there was a good deal of suppuration; and one night, as the patient complained of the smell of the dressings, the nurse saturated a piece of cotton wool with my strong acid, and placed it between her arm and her side, just below the site of the wound. When I came in the morning there was a long slough of the skin on the side below and parallel with the wound, and another on the forearm, and the patient was very sick and ill, poisoned, I imagine, by the carbolic acid. The original wound opened and

ceased to discharge, and looked dry, so that I could see the exposed pectoral muscle at the bottom of it; and the wound caused by the acid sloughed, and the patient died in a few days. I do not know whether it was pyæmia or carbolic acid poisoning; but I never saw a wound in the state this one was in, quite dry and as open as it was immediately after the removal of the tumour.

The third death after the removal of a cancerous tumour of the breast was of a still more unusual character, and I have never heard of a similar case. The wound healed chiefly by first intention, and there was promise of a speedy convalescence, when one day the patient told me that she had taken cold and had pain in her face. The next day the muscles of the face were stiff and hard, and there was unmistakeable "risus sardonicus," and pain in the abdominal muscles. These symptoms developed rapidly into acute tetanus of a most violent kind, with opisthotonos and all the other signs, as severe in this delicate lady as ever I saw in the case of a strong man at the Infirmary, and with the usual end of such acute cases, for death soon relieved her from her sufferings. I discovered afterwards that this patient had various small melanotic tumours about her body.

I should like to know whether the present free use of disinfectants has lessened the number of tetanus cases.

Of the other deaths from cancer of the breast, some were instances of the recurrence of the disease after operation, two from repeated hæmorrhages, and in some the patients had concealed their malady until any surgical interference became impossible: and if I could give the number and the fate of all the cases of the disease about which I have been consulted, I fear that the list of fatalities would be very long.

One family appears several times in this sad catalogue. A daughter from whom I had removed a cancerous breast died, aged 51, after a tedious and very painful illness, from a recurrence of the disease. The house was small, and the fetor from the large sore was most offensive and pervaded the place. After a considerable time the mother had symptoms of disease of the uterus, and she died from repeated hæmorrhages from a large and ulcerated cancerous uterus, at the age of 75. Then the father died, aged 80, from a large internal tumour; and the youngest daughter followed, at the age of 37, with cancer in the breast and stomach. There are now three surviving sisters of this cancer-stricken family; and although, perhaps, only one of the innumerable coincidences we meet with, I think it worth mentioning that neither of the three was living in the house when the first case occurred, and they were not exposed to the effluvium I have mentioned; and also that they are, I believe, free from the disease, the eldest, a teetotaller, being 70 years of age; and that they have all three been persons who have indulged very freely in alcoholic drinks.

Cancer of the vulva is one of the most painful and distressing forms of the disease; and in one of these cases it recurred after repeated operations, and the patient died after suffering great tortures.

The two cases of cancer in the neck were like one another, and appeared to begin by enlargement and induration of the cervical glands, gradually increasing until the tumour occupied the space between the jaw and the clavicle, and the skin ulcerated and sloughed, causing a large unhealthy wound which discharged blood and serum and pus having the peculiar sickening odour of cancer, lasting for many weeks, until, no vital part being

touched by the disease, the strength of the patients was simply worn out.

The case marked "Cancer of the Brain" was a patient from whom I had removed a cancerous breast, and the disease re-appeared in the brain. I had a similar case, which does not appear in these notes, at the Infirmary, when the patient made a good recovery from the operation and went out, and became stout and plethoric and apparently well; but she died suddenly from apoplexy, the hæmorrhage coming from a cancerous deposit in the brain.

TABLE No. X.

Accidents and Miscellaneous Cases.	
Overlaid	1
Sphacelus of the Leg...	2
,, Hand and Arm	1
Fractured Skull	1
,, Thigh	2
,, Neck of Femur	1
Caries of the Spine	2
Curvature ,, ...	1
Diseased Hip Joint	1
Ovarian Tumour	3
Cranial Tumour	1
Anthrax (Pyæmia)...	1
Unrecorded	4
Total	21

These cases require but little comment.

The two instances of sphacelus of the leg were old men, and both had been seafaring men all their lives until they retired from active work; one of them a man of note, of a much-respected and well-known name. The cause of the sphacelus was weakness of the circulation in the legs, I think from atheroma of the arteries; and one of them went through an acute and rapid course to the end, while the other was chronic. These cases of

mortification of the leg, as they are usually called, are by no means uncommon.

The fractured skull was the case of a schoolboy aged 14, who fell over the banisters and pitched on his vertex on a stone floor. His skull was split longitudinally, so that a definite depression could be felt along the top of his head, the line of fracture. He died in a few hours.

In my practice, fracture of the neck of the thigh-bone has not proved by any means a fatal injury. The patient whose death is here recorded was 94 years of age.

Both the cases of spinal caries died from exhaustion from the discharge of psoas abscess.

Anthrax is credited with one of the deaths in this table. It was really a death from chronic pyæmia. The patient, a clergyman aged 60, was sent to be under my care from a distance, suffering from the effects of a carbuncle which had been incised* and was nearly healed; but he had abscesses in various parts of the body, the result of undoubted blood-poisoning from the original disease. The case was chronic, but hopeless from the first.

To conclude: this task of writing a record or *resumé* of between four and five hundred fatal cases, without a single success among them, although you are conscious that it represents very many thousands of successful ones treated at the same time, is a depressing work, and in some portions of it, such as that dealing with those terrible cancer cases, it is a pain to remember them all; and also it is impossible to drive away the question which keeps intruding itself, Has the best possible been done for all these cases?

* I have elsewhere recorded my opinion about the use of the knife in carbuncle, and wish here to avoid all discussion as to treatment.

My record begins more than forty years ago, and it is said, I believe truly, that never has our art improved so rapidly in a corresponding space of time as it has in the last fifty years. Therefore, judging from this point of view, and seen by the light of our present knowledge, some of these lives now might be saved, or at any rate prolonged. Take, for example, the treatment of cases of cancer of the œsophagus by gastrotomy; the removal of ovarian tumours; the abdominal section for intestinal obstruction; and nephrectomy; and also the power, with the aid of anæsthetics and antiseptics, of performing other operations previously impossible: and again, in the domain of pure medicine, valuable new remedies have been discovered, which, with new and better treatment founded on more accurate pathology, have doubtless made our efforts more successful in saving or prolonging life, or relieving some of the vast amount of suffering we are called upon to witness.

I must draw the line here, and not venture any further into this enticing subject.

THE HOUR OF DELIVERY.

BY

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Read at the Meeting of the Bath and Bristol Branch of the British Medical Association, May 30th, 1888.

SOME persons may be disposed to think that those who attempt to determine by statistics at what hour delivery most frequently occurs, are taking a great deal of trouble about a question which is more curious than useful. But there are others who consider that no investigation can be utterly useless which contributes the smallest amount of information respecting any of the laws or operations of Nature. I, myself, belong to this latter class, and consequently have taken the trouble to ascertain how far my own experience confirms that of another observer whose conclusions were published in the *British Medical Journal* for January 7th, 1888. I quote *verbatim* the article which contained them:

"THE HOUR OF DELIVERY.

"An industrious statistician has recently contributed to a medical journal at Lille the results of an analysis of 1,000 labours, with the precise hour at which delivery took place. He reports that 45 per cent. of the labours terminated between 8 a.m. and 8 p.m., and 56 per cent.

between 8 p.m. and 8 a.m. Pushing the inquiry a step further, he found that 23 per cent. terminated between 6 a.m. and mid-day; 22 per cent. between mid-day and 6 p.m.; 27 per cent. between 6 p.m. and midnight; and 54.1 per cent. during the night—that is to say, between midnight and 6 a.m. These figures only apply to normal labours, in which nothing interfered with the physiological course; so that they go far to confirm the popular notion which admits the greatest frequency of delivery at night, 'conception generally taking place at about that time.'"

In order to test these conclusions I referred to my own Register of Obstetric Cases, which I have kept ever since I began practice, and in which I have noted the exact hour of delivery in every case. Like the observer above mentioned, I carefully excluded all cases in which there was any interference whatever with the natural process, either by medicines, by the hand, or by instruments. I therefore limited my observations to head-presentations, and to those only in which the vertex presented with the occiput in the anterior semicircle of the pelvis, because in all others manual interference is nearly always necessary. For the same reason, breech, knee, foot, and arm-presentations are excluded; and, in short, all labours in which for any cause it was necessary to expedite delivery by ergot of rye, by the hand, or by instruments. By taking these precautions, and dating back from the beginning of the present year, I was enabled, in a period of about thirty years, to obtain statistics of 1,000 perfectly normal labours.

I will now compare my own figures with those just quoted from the *British Medical Journal*. These latter show that 45 per cent. of the labours terminated between 8 a.m. and 8 p.m., and 56 per cent. between 8 p.m. and

8 a.m. My own figures yield a per-centage of 45.1 between 8 a.m. and 8 p.m., and 54.9 between 8 p.m. and 8 a.m., thus showing that the conclusions to be drawn from each set of cases are very nearly identical. From some unaccountable error, the 56 per cent. in the first set of figures is one too many, for 45 + 56 = 101. If, therefore, I subtract this 1, the numbers per cent. will be 45 and 55; and if from my own figures, 45.1 and 54.9, I subtract the one-tenth from the first and add it to the nine-tenths of the second, I shall get the numbers 45 and 55 per cent. respectively, just as in the first set of figures. With respect to my own 1,000 cases, I find that more conclusive results are arrived at by dividing the 24 hours into three periods of eight hours each, than into four of six hours.

For instance, I find that in the first eight hours, viz., from 1 a.m. to 9 a.m., there were 424 deliveries out of 1,000; in the next eight hours, from 9 a.m to 5 p.m., there were 289; and in the last, from 5 p.m. to 1 a.m., 287. Thus it will be observed that about three-sevenths of the 1,000 occurred in the first period of eight hours, and only about two-sevenths in each of the other periods —the numbers in each being very nearly equal.

The annexed table (No. I.) shows the number of deliveries which took place in each hour; but I need not take up time in enumerating these: suffice it to say that the greatest number per hour took place between 4 and 5 a.m., and was as many as 63; the next greatest number, 60, was between 3 and 4 a.m.; none of the other numbers reached 60. On the contrary, the smallest number per hour was 27, and occurred between 2 and 3 p.m.; and this was the only hour in which the number fell below 30.

In the 1,000 labours from which my statistics are

derived, there are only 163 first labours, which is scarcely one-sixth of the whole number, and much less than the usual proportion; for in ordinary midwifery practice, first labours are at least one-fifth, or even one-fourth, of the whole number attended. This difference, however, is accounted for by the circumstance that by far the majority of forceps cases are first labours; and instrumental labours are excluded from this list.

No. I.

THE HOUR OF DELIVERY IN 1,000 LABOURS.

From 1 to 2 a.m.	...	...	...	40	births	
,, 2 to 3 ,,	...	...	...	53	,,	
,, 3 to 4 ,,	...	...	...	60	,,	
,, 4 to 5 ,,	...	...	...	63	,,	
,, 5 to 6 ,,	...	...	...	51	,,	424
,, 6 to 7 ,,	...	...	...	49	,,	
,, 7 to 8 ,,	...	...	...	53	,,	
,, 8 to 9 ,,	...	...	...	55	,,	
,, 9 to 10 ,,	...	...	...	32	,,	
,, 10 to 11 ,,	...	...	...	50	,,	
,, 11 to 12 ,,	...	...	...	30	,,	
,, 12 to 1 p.m.	...	...	...	36	,,	
,, 1 to 2 ,,	...	...	...	38	,,	289
,, 2 to 3 ,,	...	...	...	27	,,	
,, 3 to 4 ,,	...	...	...	38	,,	
,, 4 to 5 ,,	...	...	...	38	,,	
,, 5 to 6 ,,	...	...	...	30	,,	
,, 6 to 7 ,,	...	...	...	36	,,	
,, 7 to 8 ,,	...	...	...	41	,,	
,, 8 to 9 ,,	...	...	...	37	,,	
,, 9 to 10 ,,	...	...	...	44	,,	287
,, 10 to 11 ,,	...	...	...	31	,,	
,, 11 to 12 ,,	...	...	...	34	,,	
,, 12 to 1 a.m.	...	...	...	34	,,	
				1,000		1,000

No. II.

163 PRIMIPAROUS LABOURS. HOUR OF DELIVERY.

From	1	to	2	a.m.	... ...	5 births	
,,	2	to	3	,,	... ...	5 ,,	
,,	3	to	4	,,	... ...	10 ,,	
,,	4	to	5	,,	... ...	12 ,,	60
,,	5	to	6	,,	... ...	7 ,,	
,,	6	to	7	,,	... ...	9 ,,	
,,	7	to	8	,,	... ...	8 ,,	
,,	8	to	9	,,	... ...	4 ,,	
,,	9	to	10	,,	... ...	6 ,,	
,,	10	to	11	,,	... ...	11 ,,	
,,	11	to	12	,,	... ...	5 ,,	
,,	12	to	1	p.m.	... ...	11 ,,	57
,,	1	to	2	,,	... ...	4 ,,	
,,	2	to	3	,,	... ...	7 ,,	
,,	3	to	4	,,	... ...	6 ,,	
,,	4	to	5	,,	... ...	7 ,,	
,,	5	to	6	,,	... ...	5 ,,	
,,	6	to	7	,,	... ...	6 ,,	
,,	7	to	8	,,	... ...	6 ,,	
,,	8	to	9	,,	... ...	8 ,,	
,,	9	to	10	,,	... .	11 ,,	46
,,	10	to	11	,,	... ...	3 ,,	
,,	11	to	12	,,	... ...	4 ,,	
,,	12	to	1	a.m.	... ...	3 ,,	
						163	163

The number of first labours is too small to enable one to draw any definite conclusions from them as to the hour of delivery; but it will be seen from the annexed table (No. II.) that on the whole they tend to confirm the results arrived at from the statistics of the 1,000 cases. Thus in the first 12 hours, reckoning from 1 a.m. to 1 p.m., there were 93 deliveries, and in the second 12 hours, from 1 p.m. to 1 a.m., there were 70 only. In the

first period of eight hours, beginning at 1 a.m., there were 60 deliveries; in the second 57, and in the third 46. It will be remembered that in the 1,000 cases there were 424 in the first period of eight hours, 289 in the second, and 287 in the third. It will thus be seen that in the 163 first labours, the first period of eight hours is the most prolific, and the two last least so, just as in the 1,000, but not to so marked a degree. In the 1,000 cases there is a great preponderance of numbers in the first eight hours, and a great decrease in the second and third periods; the numbers in these two last being nearly equal. In the 163 first labours, as in the 1,000, the greatest number of deliveries per hour (12) takes place between 4 and 5 a.m.; but the preponderance during the first eight hours is not so marked; nor is there any very marked diminution until we come to the third period, when the numbers fall from 57 to 46. This discrepancy, no doubt, is occasioned by the prolongation of the last stage of the labour in primiparæ, owing to the resistance afforded by the perineum and vaginal orifice; the delivery being sometimes postponed for hours from this cause.

There is one curious coincidence between the statistics of my 1,000 cases and the 163 first labours, and that is, that in both the three consecutive hours which have the smallest number of deliveries are from 10 p.m. to 1 a.m. In the first the number is 99, whereas in all the other periods of three hours it is above 100; and in the second it is only 10, which is far below the number in any other period of three hours. It is difficult to assign any plausible reason why in my 1,000 cases the number of deliveries should have been lowest in the three hours just mentioned, and then in the next three hours should have suddenly risen from 99 to 153, and should have reached

the acme 163 in the three hours following these; whilst in the primiparæ the numbers in each of these periods of three hours are respectively 10, 20, and 28, the first being the lowest and the last the highest recorded in any period of three hours. Perhaps, however, this is a mere coincidence peculiar to the 1,000 cases observed by me. The same, however, cannot be said regarding the fact upon which there is such a marked agreement between the Lille observer and myself; viz., as to the great predominance of labours in the eight hours immediately following midnight. This is far too marked and evident to be the result of a mere coincidence, and leads me to allude briefly to the theory that this result is owing to the time when conception usually takes place. To make this theory at all plausible, we require a great number of observations, not only as to the time of conception and delivery in man, but in the lower animals, especially the mammalia.

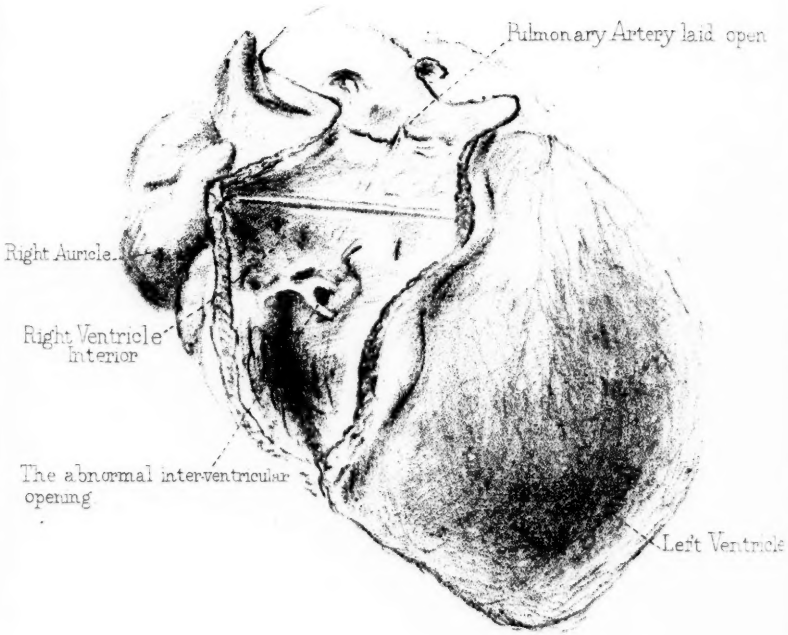
Owing to ideas of decency and propriety, the sexual act in man is usually performed during the night; but, with the exception, perhaps, of the cat tribe, there is no such marked preference for nocturnal copulation in the lower animals; and in some domesticated animals, especially in horses and cattle, the hour of copulation is regulated by the convenience of men, whose business it is to bring the males and females together; and this usually happens in the daytime. Again, if there is any kind of coincidence between the time when conception and when delivery takes place in man, the greatest number of deliveries ought to happen between the hours of 10 p.m. and 1 a.m., which is just the time when, as I have observed above, we have the smallest number. If, however, we suppose that the period of conception is the

same as that in which labour begins, when the os uteri begins to open, and not that in which the labour ends, we should get a very probable solution of the difficulty, provided the greater number of labours lasted only five or six hours: but we know, on the contrary, that the average number last at least double this time; and so, if this theory were correct, the greatest number of deliveries ought to happen in the afternoon, which we know is directly contrary to the facts observed. On the other hand, there is, I think, every reason to believe that, in most cases, the process of delivery first begins in the daytime.

Every man who has had much experience in midwifery knows how very common it is, just before he goes to bed, for him to get an unpleasant reminder in the shape of a message from a parturient woman to say that his services will probably be required some time during the night. He knows also how very often his patient's anticipations are correct; and, as our statistics abundantly prove, that the process of childbirth has a peculiar tendency to terminate in the small hours of the night. I have shown that at 1 a.m. the number of deliveries per hour suddenly rises from 34 to 40, and gradually increases until it attains its acme of 63 between 4 and 5 a.m., and then gradually declines to 55 between 8 and 9 a.m., when there is a sudden drop to 32 between 9 and 10 a.m., as soon as the hours are represented by double figures. It has often been said that death usually occurs in the small hours of the night; if so, there is a singular coincidence between the hour of entrance into the world and exit from it. Is there any analogy between the relaxation of the sphincters in the first case, and the same process in the second, especially with regard to the

circular fibres of the os uteri? However this may be, there is no doubt, I think, that the popular notion, that most deliveries take place in the night, is well founded; and therefore he who is much engaged in midwifery practice must make up his mind to sacrifice many hours of much-needed rest. In another way he is as hard-worked as Longfellow's *Village Blacksmith;* but, like him, he cannot say:

> "Each morning sees some task begun,
> Each evening sees it close;
> Something attempted, something done,
> Has earned a night's repose."



The Heart of N.P. Showing the
Right Ventricle and Pulmonary artery laid open.
P.W.W.

LAVARS 51 BROAD ST BRISTOL

Clinical Records.

NOTES ON A RARE CASE OF MORBUS CÆRULEUS.

By P. Watson Williams, M.B. Lond., Assistant-Physician, Bristol Royal Infirmary.

The accompanying drawing is that of a heart of a girl, N. P., aged 7, who died in consequence of the malformation depicted. In this drawing the right ventricle is shown laid open, the pulmonary artery being likewise slit up. There is no opening from this right ventricle into the auricle; but the abnormal communication between the ventricles is shown in the drawing.

In this heart the auricles form practically one cavity, and are very dilated. The patent foramen ovale is very large, and there could have been no obstruction to the passage of blood from the right to the left auricle.

The mitral orifice is unusually large, and its cusps thickened. There is no opening, nor any sign of the tricuspid valve between the right auricle and ventricle.

The pulmonary artery and aorta and their valves are normal. The ductus arteriosus was not patent.

The left ventricle is hypertrophied, its cavity large; the right ventricular cavity is small, and the walls very thin. At the upper or basal extremity of the ventricular septum is a circular portion, the size of a threepenny-piece, where the muscular substance is absent, the deficiency being replaced by fibrous membrane resembling a thickened valve, and having near its centre an opening

which just admits a No. 8 catheter. Attached to the edges round the opening are some structures resembling minute chordæ tendineæ; there are also a few small bead-like fibrinous deposits on these edges. This interventricular communication is situated immediately below the interval between the left and posterior aortic valve segments. The muscular substance is well nourished, and the coronary arteries rather large. Probably the course of the blood-current was that the small amount of blood going to the lung by the pulmonary artery was returned to the right auricle, thence to the left auricle, to the left ventricle, and from the left ventricle part went to the right ventricle, through the abnormal aperture, the greater portion going to the aorta.

It is worthy of note that, in spite of this deformity in the heart, the child was bright and cheerful, and very intelligent. She was born at full time, and for some months after, the mother states, was only a little blue about the cheeks. During life a systolic bruit was audible over the whole of the præcordia, below the nipple level, most marked at the base of the xiphoid cartilage.

Remarks.—This heart falls under the class of cases malformed from *arrested development*, and this probably occurred about the tenth week of fœtal life: for the interventricular septum begins to form at the apex about the sixth week, and by the tenth would have nearly reached the base of the ventricles; the auricular septum begins to develop later than the ventricular septum, and this accounts for its rudimentary condition in the case. The arterial bulb, which divides into the aorta and pulmonary artery at the tenth week, has undergone complete division in this specimen; about the tenth week also the auriculo-ventricular valves begin to form by the growing

in of fleshy plates from the walls of the common auriculo-ventricular cavities. Thus, if we allow that these plates became fused at that time, instead of developing into a tricuspid valve, the currents of blood of necessity passing between the auricles would maintain the patency of the foramen ovale.

When the ventricular septum is deficient, it is usually, as one would expect it to be, at the base of the septum, the last-formed portion, as in this case.

[The heart from which the drawing was made is preserved in the museum of the Bristol Royal Infirmary.]

TWO CASES OF PHTHISIS TREATED BY MEANS OF SUBCUTANEOUS AND INTRA-PULMONARY INJECTIONS OF CARBOLATE OF CAMPHOR.

By R. Shingleton Smith, M.D., B.Sc., F.R.C.P., Senior Physician to the Bristol Royal Infirmary.

A saturated solution of camphor in strong carbolic acid has long been known; but has attracted little notice as a therapeutic agent.

Dr. Cochran,* of Shomond, Wis., has recommended its use, both locally and internally, as an antiseptic agent. He gives it internally in ten-drop doses in capsule, and injects it hypodermically; he also employs it externally. The camphor is dissolved in a 95 per cent. solution of carbolic acid to saturation; the carbolic acid dissolves about three times its weight of the camphor, the resultant

* *Therapeutic Gazette*, December, 1887.

being a thin, clear, oleaginous mixture, having a strong odour of camphor and a faint one of carbolic acid. It has a pungent flavour of camphor, but no flavour of the acid; it causes smarting on being applied to cutaneous abrasions, and when injected under the skin causes slight stinging for a moment, which then subsides, with little evidence of local irritation.

The mixture appears to resemble the solution of carbolic acid in olive oil in this respect, that the irritating effect of the acid is entirely destroyed by the oil; and it may be assumed that the antiseptic action is correspondingly diluted in proportion to the strength. Now, it is stated by Lauder Brunton* that the strength of disinfectant required to hinder or promote the development of anthrax bacilli is about the same for camphor as for carbolic acid, one in 2,500 being sufficient. Accordingly, it may be assumed that the antiseptic power of the carbolic acid is not destroyed or diluted by the intermixture with camphor, whilst the mixture has no longer any of the ordinary caustic properties of the undiluted acid.

The solution appears, therefore, to be well suited for internal use as a germicide in phthisis; and with this view it has been employed by me in a series of cases, of which the two following are illustrations.

Charlotte C., æt. 20, single, laundress. Had enteric fever and rheumatic fever eight years ago, and several attacks of rheumatism since. Mother is a cripple, and dropsical; has lost one brother in decline, and one with dropsy after scarlet fever. Patient was admitted to Bristol Royal Infirmary on February 18th, 1888, having caught cold about Christmas, when she had a bad cough and lost her voice. She also complained of chest

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pains, worse after food, with occasional vomiting; and had been getting thin. There was no history of hæmoptysis. She was fairly well nourished, but with clubbed finger-tips, bluish conjunctivæ, and husky, feeble voice, with a troublesome cough. Her weight was 7 st. 7 lbs., and her temperature 102°. There was much gastric irritability, and some epigastric tenderness. Decided dulness at right apex, with crepitation, and exaggerated voice-sounds. Some slight doubtful dulness at the left apex. Heart-sounds normal. Urine healthy. Was ordered mixture with bismuth and morphia.

February 22nd. Much sweating at night, and troublesome cough, for which atropine and morphia pill was given.

On laryngoscopic examination, the vocal cords were found to be healthy in appearance, but did not close the glottis completely: this defect was at once remedied by the application of the induced current internally. The sputum was found to contain numerous tubercle-bacilli.

March 2nd. A hypodermic injection (mvij.) of the camphor carbolate was given in the right forearm, and was not followed by any indications of irritation.

March 4th. An injection of camphor carbolate with iodoform (mx. of one part in five). This was followed by a rise in temperature of one degree in the evening, and some irritation of cellular tissue on day following.

March 10th. An injection of the camphor carbolate without iodoform was now given daily, ten minims being introduced on the outer side of one or other thigh. These injections gave little pain, and did not irritate. Accordingly, on March 17th, an injection of ten minims was given in the apex of the right lung. There was no coughing, no hæmorrhage, nor any evidence of lung irritation.

These injections, intra-pulmonary, below the clavicle, were repeated on the 20th and 22nd, ten minims each, and a similar dose given hypodermically on all other days.

March 21st. Some induration and swelling of left thigh followed the injection of previous day; and on March 23rd a few râles were heard at the right apex, following the injection into lung on the day before.

March 27th. Another dose of ten minims was injected into the right axilla, and gave little pain. Some irritation had been caused by an injection given in the left arm a few days ago.

April 10th. An injection of carbolate of camphor with creasote (one in ten) was given in left forearm, and repeated daily.

On 15th, given over the shoulder, some irritation followed, which soon subsided. Patient was taking creasote (♏j.) three times a day, and cod liver oil with iodoform.

April 22nd. Another injection into right apex—solution without creasote—as being the less irritating to cellular tissue. There was no coughing; but patient felt a little pain on breathing deeply.

April 28th. Another injection into apex of lung gave some little pain, passing off in a few minutes. No coughing.

May 1st. Injection into second right interspace gave rise to no irritation; and on the 3rd the daily dose hypodermically was increased to twenty minims.

9th. An injection of ten minims into the right lung caused much coughing, and sputum and breath afterwards had the odour of the fluid injected. No further injections were made into lung; and on the 13th the daily hypodermic ones were discontinued.

On April 22nd, occasional râles could be heard at the right apex, and there was some dulness; but the temperature was normal: there were no active symptoms, little cough, no expectoration, appetite good, weight increased.

June 11th. Physical signs indicated some little condensation at right apex, but there were no active symptoms, and no sputum could be obtained.

Sept. 10th. General health good. No evidences of cavity or breaking down in the lung: nothing more than slight dulness on percussion at the right apex.

The following is a summary of the temperatures, weight, and injections:

DATE. 1888.	TEMP. *Morn.*	TEMP. *Even.*	WEIGHT. *st.*	WEIGHT. *lb.*	INJECTIONS.
Feby. 18 ...	101	99	7	7	
,, 26 ...	98.4	99	7	6	
March 1 ...	98.4	100	—		
,, 2 ...	98	99	—		Camph. carbolat. ♏ vij.—Arm
,, 4 ...	98	100	7	6 ...	,, ,, with iodoform—Leg
,, 10 ...	98	100	—	...	,, ,, ♏ x.— Thigh
,, 11 ...	98	99	—	...	,, ,, ,, ,,
,, 12 ...	98	98.4	7	7 ...	,, ,, ,, ,,
,, 13 ...	98	97.6	—	...	,, ,, ,, ,,
,, 14 ...	98	98.4	—	...	,, ,, ,, ,,
,, 15 ...	98	98.6	—	...	,, ,, ,, ,,
,, 16 ...	98.4	99	—	...	,, ,, ,, ,,
,, 17 ...	98	99	—	...	,, ,, Apex, right lung, ♏ x.
,, 18 ...	98	98.4	—	...	,, ,, ♏ x.—Thigh.
,, 19 ...	98	98.8	7	7 ...	,, ,, ,, ,,
,, 20 ...	97.8	98	—	...	,, ,, ,, Right lung
,, 21 ...	98	98.4	—	...	,, ,, ,, Thigh
,, 22 ...	98	98.4	—	...	,, ,, ,, Right lung
,, 23 ...	98	99.2	—	...	,, ,, ,, Thigh
,, 24 ...	98	100	—	...	,, ,, ,, ,,
,, 25 ...	98.4	99.2	—	...	,, ,, ,, ,,
,, 26 ...	98.4	99.2	7	7 ...	,, ,, ,, ,,
,, 27 ...	98	98.2	—	...	,, ,, Lung, axilla
,, 31 ...	99	100.4	—	...	,, *Daily* ,, Hypodermic in thigh
April 2 ...	98.4	100	7	7 ...	,, — ,, ,, ,, ,,
,, 9 ...	98.6	99	7	8 ...	,, — ,, ,, ,, ,,

DATE. 1888.		TEMP. *Morn.*	TEMP. *Even.*	WEIGHT. *st. lb.*	INJECTIONS.
April	10 ...	98	99	— ...	Camph. carbolat. *Daily* with creasote—Thigh
,,	13 ...	98	99.2	— ...	,, — ,, ,, ♏ x. (1 in 10) ,,
,,	14 ...	97.6	98.4	— ...	,, — ,, ,, ,, ,,
,,	15 ...	98	98.4	— ...	,, — ,, ,, ,, L. shoulder
,,	16 ...	98	99	7 8 ...	,, — ,, ,, ,, L. forearm
,,	17 ...	97.4	98	— ...	,, — ,, ,, ,, R. forearm
					Daily injections discontinued.
,,	22 ...	97.4	98	— ...	Camph. carbolat., ♏ x.—Apex right [lung
,,	24 ...	97.4	98.2	7 10	
,,	28 ...	97.4	98	— ...	,, ,, Right apex
,,	29 ...	—	97.2	— ...	,, ,, Arm
,,	30 ...	—	98.2	7 11 ...	,, ,, Thigh
May	1 ...	—	98.2	— ...	,, 2nd right interspace, ♏ x.
,,	3 ...	—	98.2	— ...	,, Right arm, ♏ xx.
,,	4 ...	—	98.2	— ...	,, R. supra-spinous, ♏ xviij.
,,	5 ...	—	98.6	— ...	,, Forearm, ♏ xx.
,,	6 ...	—	97.6	— ...	,, Buttock, ♏ xx.
,,	7 ...	—	97.4	7 12 ...	,, ,, ,,
,,	9 ...	—	99	— ...	,, Right apex, ♏ x.
,,	10 ...	—	99.2	— ...	,, Buttock, ♏ xv.
,,	12 ...	—	98	— ...	,, ,, ♏ xx.
,,	13 ...	—	99	— ...	,, Arm, ♏ xx.
,,	14 ...	—	100	7 12 ...	*Injections discontinued.*
,,	21 ...	—	98	8 0	
Sept.	10 ...	—	—	8 4	

It will be seen that about fifty injections in all were made in the course of ten weeks; of these nine were into different spots of the condensed right upper lobe, whilst the remaining forty-one were into various parts of the subcutaneous cellular tissue. The average quantity injected amounted to about ten minims, so that the whole quantity injected in the course of ten weeks only slightly exceeded one ounce. This comparatively small amount could obviously have no very powerful antiseptic or germicide effect when distributed throughout the blood of the whole body, so that we must look to the local action of the drug on the part injected if we are to get any definite

germicide - result. The subcutaneous injections were mainly intended to test the characters of the fluid injected, in order that it might be shown that the fluid to be injected into the lung was not powerfully irritating to the tissues elsewhere. Variations were made in the fluid on two occasions. An iodoform solution in camphor carbolate (2 grs. in ♏ x.) was used once, but gave rise to so much inflammatory cellulitis that it was not repeated. A solution of creasote in camphor carbolate (1 in 10) was injected subcutaneously on six occasions; but this was followed on each occasion by some slight local irritation, which subsided after a few days. Neither the iodoform nor the creasote solution was used for injection into lung.

As regards the immediate effect of the intra-pulmonary injection, there was little to observe. On only one occasion did any violent coughing occur; but on this occasion the fluid must have reached a bronchus, for the odour of it was at once detected in the breath and the expectoration. There was so little discomfort from the intra-thoracic injections, that the patient herself preferred those to the subcutaneous ones, "because they did not hurt so much," and they gave rise to no discomfort afterwards. A careful examination of the temperature-chart shows that on three occasions there was a rise amounting to one or two degrees on the day after the injection, but there were no symptoms of pleuritis or any other evidence of internal irritation.

It is always difficult in a case of phthisis to justly estimate the value of the treatment adopted, and hence we can only say that the methods employed appeared to give an eminently satisfactory result: the general improvement in the patient's condition was unquestionable. The case looked at first like one of acute progressive

disease; but all active symptoms were arrested: the catarrhal throat soon got well; the night-sweats and wasting ceased; the temperature became absolutely normal; the sputum, which had been crowded with bacilli, could no longer be obtained for examination; and the patient considered herself quite well. She at once resumed her occupation as laundress; has continued in good health, and is still gaining weight.

Mary P., æt. 18. Previous good health; good family history; getting thin for two months; cough and cold two weeks. On night of March 11th, during a fit of coughing, she suddenly brought up about a quart of bright red blood, and was admitted to Infirmary on following day.

On admission was fairly well nourished and of good colour. Finger-tips not markedly clubbed. Pulse quick, but of good volume. Temperature 101° in evening. Dulness at left apex, front and back; expiratory sounds prolonged, and coarse crepitations, with increased vocal resonance. Little cough, and no expectoration. Pityriasis versicolor on chest.

Hæmoptysis recurred on 12th and 13th in small quantity, and the evening temperatures ranged from 101° to 103°. On the 18th there was extensive dulness at both bases, with abundant fine crepitation.

April 3rd. It was noted that breath-sounds on right side were good; but still crepitation and some dulness at the left base, and also at the left apex, both supra-spinous and infra-clavicular.

April 20th. No return of hæmoptysis; base of lung clearing slowly, and no active symptoms. Temperature had gradually come down to the normal, and weight was stationary at 7 st. 9 lbs.

Injections of carbolate of camphor commenced on the 21st; at first ten minims, afterwards increased to twenty: given first in left thigh, then in right. No irritation followed; accordingly, on 24th, an injection into left upper lobe in front was made, 10 minims, giving little pain or irritation, and no coughing. Temperature rose to 100.2° on day following, but was normal in two days. Subcutaneous injections were resumed on the 27th, and an intra-pulmonary one given on the 28th. Daily injections were given under the skin, and a third into left apex on May 1st, a fourth on May 4th, and a fifth, of 15 minims, on May 8th. They were then continued on alternate days, and discontinued on the 15th. Eighteen injections in all were given in about three weeks; five into apex of left lung, and thirteen into the subcutaneous tissue of different parts. One injection gave rise to a small boil in the thigh; the others were painful for a few seconds, but gave no discomfort afterwards.

On May 22nd there was still slight dulness at the left base, also at left supra-spinous region; in front there was medium-sized crepitation and bronchophony below the left clavicle. There was little cough, but no expectoration. No sputum had been obtained for examination. Evening temperature had been normal for two weeks, and general health was good.

DATE. 1888.	TEMP. *Morn.*	TEMP. *Even.*	WEIGHT. *st.*	WEIGHT. *lb.*	INJECTIONS.
Mar. 12 ...	99.6	101			
,, 16 ...	100	103			
,, 20 ...	99.4	101.6	7	9	
,, 23 ...	98.6	101.4			
,, 30 ...	98.6	100			
April 7 ...	98.6	99·6	7	9	
,, 14 ...	98.6	101.2	7	9	
,, 21 ...	98	98.4	7	9	... Camph. carbolat., ♏ x.—Leg

DATE. 1888.	TEMP. *Morn.*	*Even.*	WEIGHT. *st.*	*lb.*	INJECTIONS.
April 24 ...	98	98	—	...	Camph. carbolat. ♏ x.—Apex left lung
,, 27 ...	98.6	99.2	7	9 ...	,, ,, Left leg
,, 28 ...	98.6	99	—	...	,, ,, Left apex, lung
,, 29 ...	98.4	99.2	—	...	,, ,, Right leg
,, 30 ...	98.6	99.6	—	...	,, ,, Left thigh
May 1 ...	98.2	98	—	...	,, ,, Left apex, lung
,, 3 ...	98.6	99	—	...	,, ,, Left leg, ♏ xx.
,, 4 ...	98.2	99	—	...	,, ,, Left apex, lung, ♏ xv.
,, 5 ...	98.6	99	7	9 ...	,, ,, Right thigh, ♏ xx.
,, 6 ...	98	98.4	—	...	,, ,, Left thigh
,, 7 ...	98	98.4	—	...	,, ,, Right thigh
,, 8 ...	98.2	98	—	...	,, ,, Left apex, lung, ♏ xv.
,, 10 ...	98	98.4	—	...	,, ,, Right gluteus, ♏ xv.
,, 12 ...	98.2	98.4	7	9 ...	,, ,, ,, ,, ,,
,, 13 ...	98	98.4	—	...	,, ,, ,, ,, ♏ xx.
,, 15 ...	98	97	—	...	,, ,, ,, ,, ♏ xv.
,, 19 ...	98	98			

In this case also the injections gave rise to a satisfactory result. The whole quantity injected was 245 minims, within twenty-five days, 60 minims having been diffused through the diseased patch at the apex of the left lung. On one occasion there was a rise in temperature of two degrees on the day after injection; but, commonly, there was no cough, and no evidence of lung-irritation. At no time could any sputum be obtained for examination; but the patient had abundant evidence otherwise of the bacillary nature of her disease. When treatment was discontinued she was quite well, with no lung-symptoms, and with normal steady temperature: her disease, which threatened to be acute and active, appeared to have been entirely arrested.

PROGRESSIVE MUSCULAR ATROPHY WITH RECOVERY.

By J. MICHELL CLARKE, M.A., M.B., M.R.C.P., Assistant-Physician to the Bristol General Hospital.

The following case showed well-marked signs of the commencement of progressive muscular atrophy in the hands, and is especially interesting from the fact that complete recovery took place under anti-syphilitic treatment.

The patient was a leather-dresser of 30 years of age, of a healthy family; his father and mother were both alive. I first saw him on December 5th, 1887.

He had had syphilis some years previously, and an attack of rheumatic fever, not severe, in 1881. He had never suffered from any accident, and had always been temperate.

The present illness began two months previously with weakness and gradual loss of power in the thumb and index-finger of the right hand. At the same time he noticed that the muscles of the thumb and finger wasted. The weakness interfered with his work, and he was unable to write. There was at no time any loss of sensation, or any pain.

His face was pale and pasty, and he suffered from constipation. On examination, the thoracic and abdominal organs were normal. In the right hand the thenar eminence, the prominence corresponding to the abductor indicis, and the second and third dorsal interosseous spaces showed marked wasting; the eminences being flattened and the interosseous spaces hollowed out. There were also slight depressions between the flexor tendons in the palm of the hand. No fibrillation of the

affected muscles was observed, but their mechanical irritability was increased, a tap causing a local contraction.

The extending action of the interossei in the fingers, as in making the up-stroke in writing, was entirely lost; while the action of the long flexors was perfect. The abducting action of the interossei was also lost, while adduction was extremely feeble.

The thumb could be opposed to the little finger, and could be flexed and extended; but all these movements were very weak.

The thumb-muscles gave diminished reactions to both the Faradic and Voltaic currents. In the abductor indicis the reaction to the Faradic current was almost entirely lost, a few fibres only responding to a very strong current. The grasp of this hand was exceedingly weak.

In the left hand there appeared to be slight wasting of the abductor indicis; and the special actions of the interossei were feeble.

There was nowhere any abnormal affection of sensation to be made out, either to pain, touch, or temperature.

The muscles of the shoulders, arms, and forearms were healthy; the tendon reactions normal. There was no affection of the legs, and the knee-jerks were normal.

The affected muscles were systematically rubbed night and morning, and a constant current of moderate strength applied for ten minutes every other day. During the time he was under treatment—four months—he was given a mixture containing arsenic and iodide of potassium, the dose of each being gradually increased.

At the end of seven weeks a decided improvement could be seen: the thenar eminence was much less flattened, and the interosseous spaces partly filled up again, while there was a marked gain of strength.

At the end of four months the strength of the hand and movements of the fingers were very good; the wasting had disappeared, except that the abductor indicis was a little smaller in the right hand than in the left; but the other muscles were of good size and tone.

The electrical reactions were normal.

He was now able to do his work well, and was anxious to return to it. His hand has remained well for six months, and is as strong as ever it was.

The lesion here would seem to have been a syphilitic one in the grey matter of the anterior cornu, affecting the ganglion-cells, and so situated as to exactly produce the symptoms of progressive muscular atrophy in those cases in which it begins in the small muscles of the hand. Complete recovery in cases of this kind, and recovery under anti-syphilitic treatment, is so rare that I have thought it worth while to record the case.

Reviews of Books.

Elements of Pharmacology. By Dr. OSWALD SCHMIEDEBERG, Professor of Pharmacology, University of Strasburg. Translated, under the Author's supervision, by THOMAS DIXSON, M.B., Lecturer on Materia Medica in the University of Sydney, N.S.W. Edinburgh: YOUNG J. PENTLAND. 1887.

PROFESSOR SCHMIEDEBERG's pharmacological commentary on the last edition of the German Pharmacopœia is a work which is, to some extent, worthy of the reputation of the distinguished author. Although nominally treating of pharmacology only, it alludes also more than incidentally to the therapeutical uses of the substances treated of, and is therefore interesting to the physician as well as useful to the physiologist. The book is not one which is to be ranked in comparison with Dr. Lauder Brunton's text-book, being on a much less extended scale and less complete plan, and seems indeed brief, even to baldness, on certain substances which are useful therapeutically, though of limited sphere of action physiologically. To those, however, who do not possess Dr. Brunton's work, it can be unhesitatingly recommended.

Dr. Dixson's translation is expressed in good idiomatic English, bearing but few traces of the Teutonic phraseology of the original, though here and there we meet with a strange word, such as "feringrea," which conveys no definite meaning to most practitioners. At the time of translation, also, opportunity has been taken to incorporate some new diagrams and fresh matter, bringing the book more nearly up to date.

The Diagnosis and Treatment of Eczema. By TOM ROBINSON, M.D., Physician to St. John's Hospital for Diseases of the Skin. London: J. & A. CHURCHILL. 1887.

While in certain departments of Medicine (as, for instance, nervous diseases) classification has, during recent years, been

continuously undergoing evolution, in that of skin-diseases the opposite process of devolution has markedly been taking place; and instead of the elaborate nomenclature of Willan and Bateman, a much less complex subdivision now obtains. This simplicity is forcibly impressed upon one by the perusal of Dr. Tom Robinson's treatise on Eczema, upon which simplicity practitioners and students are alike to be congratulated. Dr. Robinson's book, besides being free from undue elaboration of nomenclature, is easily intelligible, comparatively brief, and devoid of affectation. If its matter is neither very profound nor very novel, it is thoroughly practical; the section on treatment is entirely worthy of attention, and contains several excellent recipes—always of value in the treatment of a disease so capricious, and often so refractory, as eczema.

L'Électrothérapie: Journal d'Électricité médicale. Paris: 11 Rue de Mogador.

This is a monthly journal devoted to the study of Electricity as applied to medicine, published under the editorship of Dr. Léon Danion, with several co-editors. The seventh number, dated July, 1888 (the only one we have received), is chiefly made up of two long papers in large print, the first on the treatment by electrolysis of hypertrophy and of tumours of the prostate, by Dr. Leopold Casper. After some preliminary experiments on animals, he has devised a method by which he inserts the negative electrode into the prostate from the rectum, the positive being a broad, flat electrode, placed on the abdomen. The negative electrode consists of a long needle, insulated except at its extremity. The author seems to have met with a fair measure of success in the few cases already treated. The method is a rational one, and it may be anticipated that some procedure of this kind will be of great service when further experience has enabled us to select the cases suitable for it, and to perfect the mode of operation. The second paper, by Dr. Ladame of Geneva, on "the electrical treatment of sexual troubles in man," gives an exhaustive history of the methods hitherto carried out for the relief of the different disorders comprised under this head, with the particular plan of electrical treatment favoured by the author in each. As might be expected, apart from the mental effect in some of the neuroses obtained by passing an interrupted or constant current through the affected parts, the

results attained have not been particularly gratifying. The rest of the periodical is in small print, and contains, *inter alia*, an account of a new and improved apparatus for the use of statical electricity, and of the various electric lamps used for the examination of the eye, throat, bladder, &c., with the special advantages or disadvantages of each. There are some abstracts, gathered from contemporary medical literature, of papers on the electrical treatment of various disorders, and a few abstracts of interesting and important papers on general medical subjects.

We doubt very much whether there is any ultimate gain to be derived from the study of disease from the point of view of its accessibility to treatment by electricity; but if a paper with this special object in view is required, this one will answer the purpose as well as any other.

A Handbook of Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I. Second Edition. London: H. K. LEWIS. 1888.

From frequent reference to the first edition of this book, we are able to say that it contains much more information on the subject upon which it treats than could be expected from its size; and the present improved edition is perhaps, taken all together, the best book of its class extant on diseases of the eye, and it should certainly be in every oculist's library. For the family physician the work contains everything that is likely to be required; but it can scarcely be considered to be fully illustrated, though it contains 150 woodcuts. Symptoms, causes, diagnosis, and prognosis are systematically dealt with under each disease; and the rules for treatment are given fully and definitely, as might be expected from so experienced a clinician as Dr. Swanzy. The chapter on sympathetic ophthalmitis is eminently practical: that on glaucoma deals fully with the symptoms in very simple language, and gives a succinct account of the pathology as at present understood.

The medical side of ophthalmology is well represented from the pathological standpoint, as in the chapter on diseases of the retina, in which it is of such importance to ascertain the condition of the vascular organs, of the kidneys, and of the "diathesis" or disposition of the body: but our author here, as also in writing upon the choroid, gives fewer suggestions for treatment of the eye-lesion than might have

been expected from him; although, it must be admitted, more heroic or experimental measures are frequently of no avail. The chapter on the pupil is a short thesis in itself, based upon very wide reading on the subject. The conditions and actions of the orbital muscles, diplopia, squint and its treatment, receive full consideration well up to date.

An appendix gives information as to the standards of vision required for the various Government services.

Diseases of the Skin: their Description, Pathology, Diagnosis, and Treatment. By H. RADCLIFFE CROCKER, M.D. (Lond.) With 76 Illustrations. London: H. K. LEWIS. 1888.

Another huge book on skin-diseases! In our last number we noticed a large volume on this subject, and now we are confronted with another of a similar kind containing over 700 pages. This time it is a reflex of the experience at University College Hospital. But as the practice there is much the same as at other hospitals, the existence of the book is not thereby justified. The fashion of producing books which are very much like those already existing is one that should be discouraged. The profession does not stand in need of treatises that are little else than expositions of routine practice, even although they bear the *imprimatur* of a department of a large London hospital. We view with dismay the threatening prospect of being invited to consider in a large monograph how, for example, they treat whitlow at St. Etheldreda's, and then, in a still larger volume, to find out that they do much the same thing at St. Silvester's.

It cannot be expected that we should read through such a volume as this before us. But a general look at it leads us to the belief that it is neither better nor worse than similar guides with which the profession is familiar. There was some hope that the modern tendency was towards simplicity in the classification of skin-diseases. We are disappointed at finding here a great inclination to minutely differentiate. Acne is resolved into twenty divisions. We have been teased over and over again with the unpractical divisions of eczema and psoriasis; but we did not expect to be plagued with twenty-three varieties of erythema, or fourteen of nævus. This may do for the unnecessary refinements of examination-purposes, but is a needless worry for the man in practice. The illustrations are of the usual character, and a useful list of formulæ

is given in an appendix. It is, however, distressing to find an author, who gives us etymological enlightenment about the derivation of words, writing about the "pubis."

The book is pleasant to read, because its literary style is so easy, and because there is much beauty about its mechanical finish.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P. Seventh Edition. London: H. K. LEWIS. 1888.

When a book like Roberts's *Medicine* comes to us in its seventh edition, there is not much need to do more than chronicle the event. Of all handbooks to medicine there is perhaps none so generally useful as this. It is a book that leads the reader to think and observe for himself, rather than attempt to treat disease by consulting an index and using a ready-made prescription. This is the ground upon which we heartily recommend it.

Diseases of Bones: their Pathology, Diagnosis, and Treatment. By THOMAS JONES, F.R.C.S. Pp. 369. London: SMITH, ELDER, & Co. 1887.

THIS work is an honest, original, and successful attempt to deal with the whole subject of bone-diseases. The author has personally worked at his subject; both clinically and pathologically his observations are mostly his own; and he has given due and discriminating attention to the work of others. The work is well and abundantly illustrated with chromo-lithographs, etchings, and wood-engravings; and most of the illustrations are original.

The book offers itself to criticism in respect of classification and arrangement. Thus, a chapter on Hypertrophy and Atrophy of Bone precedes the chapter on Inflammation of Bone. Inflammation of bone includes simple osteitis and periostitis, both somewhat scantily treated in one chapter of 20 pages; while osteomyelitis occupies two separate chapters, together occupying about 50 pages. This is probably a result of the special personal studies of the author. While we are very far from regretting the amount of consideration given to osteomyelitis, we should have liked to see the rest of the work written up to the same high level. In some minor matters, the same criticism might be applied. But we are

loth even to seem to lower the high estimate we have formed of the work as a whole by carping at details. It is undoubtedly the best work on the subject which has recently appeared in these islands, and reflects great credit on the industry and research of the author.

The Electric Illumination of the Bladder and Urethra. By E. HURRY FENWICK, F.R.C.S. Pp. 176. London: J. & A. CHURCHILL. 1888.

Mr. Fenwick has done surgeons a real service by making a special study of electric endoscopy as applied to the diagnosis of diseases of the bladder and urethra, and by so promptly and efficiently placing the results of his experience at their disposal. The work before us is well and clearly written, is sufficiently illustrated, and gives exactly the amount of information on the subject that is wanted. That there is a future before electric endoscopy in the treatment of disease, there can be no doubt: the history of future improvements must date from the publication of this work.

Lectures to Practitioners. Tabes Mesenterica, by W. T. GAIRDNER, M.D.; and The Pathology of Phthisis Pulmonalis, by JOSEPH COATS, M.D. Pp. 286. London: LONGMANS & Co. 1888.

Glasgow practitioners are fortunate in having such men as Dr. Gairdner and Dr. Coats to lecture to them on subjects with which they are specially familiar. The Lectures are evidently the outcome of much experience and research on the part of both authors. As an advanced philosophic and clinical study of the whole subject of consumption, the work is of great value, and deserves to take a permanent place in the literature of the subject.

The Principles of Cancer and Tumour Formation. By W. ROGER WILLIAMS, F.R.C.S. Pp. 194. London: JOHN BALE & SONS. 1888.

"The present work" (the author tells us) "is intended as an introduction to a contemplated treatise on the Pathology and Treatment of Cancer and Tumour Formation, of which it forms the first part. The author proposes to complete the treatise in

six parts." It is not easy to form an opinion of an edifice before the first story has been built; and it is not unlikely that if Mr. Williams had ventured to give us the whole of his work in one volume (it need not have been a large one, judging from the size of the first sixth part), we should have been more pleased with it. But Mr. Williams evidently likes to publish in driblets, as witness a somewhat imposing array of "Other Publications by the Author" on the last page, few of which could fill half-a-dozen pages octavo. Still, pregnant truths may be conveyed in few words.

The work before us contains a good deal of solid pabulum, served up with some sauce of speculation, and not a little spice of philosophy. For example of the last: "The *vis inertiæ* opposed to all progress is immense." "Empiricism is itself but a stepping-stone to real science. Those who think that the mere heaping up of facts constitutes science are certainly in error. We ought to remember what Aristotle long ago pointed out, that intellect (νοῦς) is the beginning and end of science." Such remarks—and the book contains many of them—we have found diverting and instructive, considerably adding to the zest of perusal. If they are seldom new, they are nearly always apt and to the point; a sort of Uncle Esek's Wisdom interspersed in a treatise on political economy.

The proper substance of the book is worked out with care and ability. The illustrative facts are numerous, have been gathered from very wide sources, and are marshalled in clear, coherent, and consecutive manner. Occasionally the conclusions seem to overleap the facts, and the deductions to outrun the premises; but the whole is a suggestive piece of reading, well written, clearly expressed, and exhibiting some logical acumen.

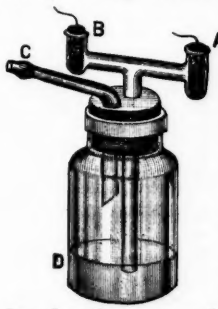
Catalogue of Lewis's Medical and Scientific Library. Pp. 267. London: H. K. Lewis. 1888.

This catalogue, "revised to the Midsummer of 1887, and including a classified index of subjects, with the names of those authors who have treated upon them," may be regarded as a fairly complete list of the most modern medical and scientific works; and as such will be found of value, not only to the discriminating purchaser of books, but to the reader and student. At a glance he can see what men have written on any subject; a further easy reference gives the full title and date of the publication; while last, but not least, the price is uniformly appended.

Notes on Preparations for the Sick.

Chloride of Ammonium Inhaler. Drugs in Capsules.—T. BUXTON, Bristol.

The **Inhaler** is one of the most simple, and at the same time most efficient, of the numerous devices for supplying chloride of ammonium. It yields a plentiful supply of the gas, which is well washed, and does not pass through any Indiarubber tubes. It cannot well fail in action, and will be always ready whenever the plugs are freshly charged with ammonia and hydrochloric acid. The simplicity of the apparatus will be seen by the drawing and the directions for charging and using. First. Fill the bottle D one-third full with water. Second. Dip the porous plug A into the solution of ammonia, drain off excess of ammonia and replace it in the chamber A. Third. Dip the porous plug B into the hydrochloric acid, drain off excess of acid and replace it in the chamber B. *The Inhaler is now charged.* Place the mouthpiece C between the lips, and inhale by drawing the vapour into the mouth and throat, then exhale by breathing naturally through the nostrils. This should be repeated for about five minutes at a time and at least three times a day. N.B. Be careful never to blow into the Inhaler, and see that the plugs fit loosely.



The fumes of chloride of ammonium will be found useful in many acute and chronic affections of the throat and air-passages.

Each of the **Creasote Capsules** contains five minims of the drug. The value of creasote appears to depend to a great

extent on the dose in which it is given. The powerful taste prevents its full administration in the fluid form, even in combination with tinctures, glycerine, or cod-liver oil. The capsule is one method by which full doses may be given: one or more taken after food are slowly dissolved, the contents mix with the food, and cause no after-taste or interference with the digestion.

The **Creasote and Iodoform Capsules** each contain five minims of creasote with one grain of iodoform suspended in it. They are a convenient form in which two nauseous, but useful, drugs may be easily administered without risk of gastric irritation. Drugs of this kind, which have to be continued for months or perhaps years, are better given in the capsule-form, as they are less likely to weary and disgust the patient by either their taste or odour.

In the **Cascara Sagrada Capsules** the nauseous taste of a superlatively nauseous drug is effectually covered by enclosing an inspissated fluid extract in gelatine. Each capsule represents thirty drops of the fluid extract. They are efficient in action, and are altogether a success.

We have also received from Mr. Buxton samples of **Liq. Cascaræ Sagradæ Dulcis** (Evans), of **Pearson's Liebig's Beef Wine,** and of **Effervescing Antipyrin.** In the first of these preparations two fluid drachms are equivalent to one drachm of the bark. It is absolutely free from bitterness, but retains the full aperient value of the extract.

The **Beef Wine** is a combination of port, extract of beef, quinine, and extract of malt. The essence of five pounds of beef is contained in each quart of the fluid. It is pleasant to the palate, its ingredients are capable of rapid assimilation, and it should be of much therapeutic value.

The analgesic and hæmostatic properties of **Antipyrin,** in combination with its antipyretic powers, give it a very wide range of utility; and the effervescing form is one of the most agreeable modes for its administration. Each drachm contains five grains of the drug, and is sufficient for many cases of nervous headache, and slight pains or pyrexia: in more severe cases this dose may be doubled, and may be given every hour till the pain is relieved or the temperature has fallen. In the pyrexia of phthisis we have found it materially add to the comfort of the patient, and in many nerve cases it acts better than the bromides.

Sodium Silico-fluoride.—WINSER & Co., Manchester.

This, which is also known as Salufer, is a powerful antiseptic and disinfectant, non-volatile, non-poisonous, free from smell, and does not stain. Water will not dissolve more than 1 ounce to the gallon; but a ¼-ounce per gallon is sufficient for disinfecting purposes. Mr. William Thomson of Manchester reports that of the compounds of fluorine this is the most powerful, and that a saturated solution of this salt preserves chopped meat better than 1 in 500 of mercurial bichloride. The salt has been used by Mr. Mayo Robson for general surgical purposes, more especially when the mercurial bichloride is contra-indicated; and the results given were satisfactory. The powder was found to be a strong irritant; but a solution of one grain to the ounce was not so. Hydrofluoric acid has recently been credited with success in the treatment of phthisis: possibly Salufer may prove to be still more useful.

Dr. Angell's Milk Food.—R. SUMNER & Co., Liverpool.

This **Food** is the most improved form of the infants' food originally devised by Liebig: "it is cooked and pancreatised." Being easy of digestion, it must be of service to the dyspeptic, who cannot well have too much variety in this kind of food, none of which he likes, although he cannot digest anything stronger.

We have submitted this food to microscopic examination, and find that the starch-granules show no indications of the action of heat. It appears to us that it must be a mistake to speak of unbroken starch-granules as cooked; certainly they require further cooking before they can become fitted for human aliment, inasmuch as it is generally admitted that unbroken starch-granules pass unchanged through the alimentary canal of man.

Scott's Emulsion of Pure Cod Liver Oil with Hypophosphites of Lime and Soda.—SCOTT & BOWNE, London.

This now well known **Emulsion** contains 50 per cent. of the oil with six grains of hypophosphite of lime and three grains

of the soda salt in each fluid ounce. It is a permanent emulsion, is not liable to decompose or grow rancid; it has a large percentage of glycerine, giving it a sweet taste, is palatable, easily digested, and is shown by experience to be effective in counteracting many states of defective nutrition.

It is one of the best emulsions we have given, and will not disappoint those who use it.

Kola Chocolate.—THOMAS CHRISTY & Co., London.

This is prepared from the powdered nut of the Sterculia acuminata: it contains a large percentage of caffeine, and hence are probably due the marvellous sustaining powers credited to the fresh and dry nut by the natives on the West Coast of Africa and in the West Indies. The bitterness and astringency of the nut impart tone to the digestive organs, and have a beneficial action in diarrhœa and dysentery.

Both as a fluid beverage, and as a food product, the **Kola Chocolate** forms an agreeable preparation, well borne by the dyspeptic, and of use in the treatment of neurasthenia, dipsomania, insomnia, and other unruly disorders of the nervous system.

The Kola Tablets, convenient for those who cannot prepare the Chocolate twice a day, have been found useful to those engaged in mental or bodily fatigue: in long journeys, when meals are necessarily irregular, their sustaining properties will be much appreciated.

Vichy "Pastilles Digestives."—INGRAM & ROYLE, London.

These **Pastilles Digestives** of the Vichy Thermal Establishment are prepared with the natural salts extracted from the Vichy waters by the Compagnie Fermière. They are flavoured with peppermint, lemon, vanilla, rose, tolu, aniseed, or orange flower: they may also be obtained unflavoured. They have obtained a considerable reputation for their convenience and utility in the treatment of some of the varieties of dyspepsia. Where the sugar is not a disadvantage, they are a pleasant and efficient method of administration of small doses of alkali in the lozenge form.

Unsweetened Condensed Milk.—The First Swiss Condensed Milk Co., London.

This preparation is simply pure, unskimmed, Alpine milk of good quality, without the addition of sugar or any other preservative whatever. It is uniform in quality, will keep well in any climate, and on dilution forms a good ordinary milk, with the normal proportion of nitrogenous and other constituents. Sufficient heat is used in the process of condensation to destroy all putrefactive germs: it follows that pathogenic germs must be destroyed likewise, if any were present. This milk is therefore an effectual safeguard, to those who use no other, from such contagious diseases as scarlet fever, typhoid, tuberculosis, &c., which have frequently been traced to the milk supply. The purest milk, further purified by heat, and preserved in hermetically sealed tins, cannot carry infection, and is always within reach by dilution of this manufacture of the Alpine Milk Exporting Company at Romanshorn.

Condal Water.—23 Lime Street, London.

This is a natural aperient water from the springs at Rubinat, in Spain, bottled at the source, and not manufactured in any way. It is not a bitter water, and it does not deteriorate when uncorked. We have found it to be a most efficient aperient, and the dose is easily graduated in accordance with the effect desired.

PERISCOPE.

MEDICINE.

Optic Atrophy following Chorea.—One of these very rare cases is recorded in the *Edinburgh Medical Journal*, March, 1888. A youth of seventeen, who had slight chorea when seven years old, and during convalescence suddenly lost sight in the right eye, was admitted at the Royal Infirmary. Ophthalmoscopic examination showed that there was absolute atrophy of the right optic nerve, and both arteries and veins were extremely small. There was no trace of hæmorrhage, and the disc was clearly defined in outline. The left eye was normal in every respect. This condition was attributed to embolism of the central artery; and if such was the case, it lends some support to the embolic theory of the pathology of the disease.

Sulphurous Acid in Phthisis.—The resuscitation of an ancient method, used by Galen, of treating this affection seems to have been attended with very encouraging results. The vapour is produced by burning sulphur in a closed chamber, or by means of a lamp containing bisulphide of carbon, or by burning a current of sulphuretted hydrogen gas; and the patient is directed to go on inhaling for as long a period as possible, and to repeat the operation several times daily. Both local and general improvement occurs, and the bacilli rapidly diminish in numbers. Such, at least, is the report given by MM. Delon and Dariex.—*London Medical Recorder*, May, 1888. ARTHUR B. PROWSE, M.D.

Eye-Troubles in Locomotor Ataxy.—M. Berger brings forward the results of his experiences on 109 patients:

(1) Diminution of the intra-ocular tension, sometimes on one side only, and coming on in the paralytic stage.

(2) Paralysis of the smooth muscle-fibres of the eyelids, and, as a result, narrowing of the palpebral fissure. Myosis occurs together with this symptom.

(3) Change in the shape of the pupil; it becomes elliptical instead of circular. M. Berger attributes it to paralysis of the vessels of the iris.

The concomitance of these symptoms reminds one of the analogous effects of section of the sympathetic in the neck; but as each of them may occur separately, M. Berger is inclined to attribute them not to actual lesion of this nerve, but to irritation transmitted along it from the spinal cord.—*Le Progrès médical*, June 16th, 1888.

Preventive Vaccination in Asiatic Cholera.—M. Pasteur, in the name of M. Gamaleia of Odessa, read a paper on this subject at the meeting of the Academy of Medicine, on August 22nd. M. Gamaleia has applied to cholera two great principles learnt from Pasteur's experiments—that of progressive increase in the intensity of a virus, and that of the use of chemical vaccines. It is easy to produce cholera-vibriones of extreme virulence by passing them through a pigeon after they have been inoculated on a guinea-pig. It then kills the pigeons by causing a "dry" cholera, with exfoliation of the intestinal epithelium; the microbe is to be found in the blood of those pigeons that die.

After some inoculations this microbe acquires so great virulence that one or two drops of the blood of the inoculated pigeons kills fresh pigeons in from eight to twelve hours. This virus also kills guinea-pigs in still smaller doses. It is important to note that all animals of these two kinds succumb to the virulence of the infective process.

This virus, of absolute lethal power, can confer immunity from cholera; a pigeon twice inoculated with an ordinary culture of the cholera-microbe will not be affected by repeated inoculations of the intensified virus. If a cultivation is made of this intensified virus (obtained from the blood of the pigeon through which the virus has been passed) in some nutritive material, and if the culture thus obtained be heated to 120° C. for twenty minutes, in order to completely destroy the contained microbes, it is always found that the heating process has left uninjured in the sterilised culture an active poison. Four c.cc. of this sterilised culture injected into a guinea-pig causes a progressive lowering of temperature, followed by death in from twenty to twenty-four hours. Pigeons also succumb to it with the same morbid phenomena, but only after a dose of 12 c.cc. at a time has been injected. If the injection of this 12 c.cc. is spread over a period of three, four, or five days, the pigeons are not killed, and are now insusceptible of cholera. The most virulent preparation of the

virus does not kill them. In the same way guinea-pigs can be protected by injecting the above sterilised culture in doses of 2 c.cc. on two or three occasions. We are now in possession of a protective vaccination for cholera; the method is based on the employment of sterilised vaccines, and possesses all the advantages of chemical vaccinations—that is to say, safety and certainty. These experiments lead us to hope that this method can be applied in the case of human subjects, with the view of protecting them from the ravages of Asiatic cholera.—*Le Progrès médical*, August 25th, 1888.

Aneurisms and Tubercle-Bacillus.—In a paper read before the Academy of Medicine, M. Germain Sée stated that he had been struck by the fact, especially since the discovery of the tubercle-bacillus, that patients suffering from aneurism of the aorta often become tubercular, and die of pulmonary phthisis, attended with the formation of cavities, and progressing slowly without fever. This had been observed by Stokes, and numerous instances can be found in the records of Pathological Societies. Out of twenty-four cases of aneurism under his own care, seven were thus affected with pulmonary tuberculosis.

It is now well known that patients with cardiac affections are not exempt from phthisis. M. C. Paul has demonstrated the frequent occurrence of phthisis in cases of narrowing of the pulmonary artery. Aortic aneurism must now be considered one of the agents favouring the development of the tubercle-bacillus. In aneurism, from the disturbance of the circulation there is a stagnation of the venous blood, and diminished activity of the gaseous exchanges between the gases of the blood and those of the atmosphere. In this internal gaseous medium (in the alveoli of the lungs and smallest air-passages) the bacillus appears to multiply when it enters the body by the respiratory tract. In aneurism the air is imperfectly renewed in the whole of the lungs, just as in normal conditions it is imperfectly renewed in the apices as compared with the rest of the lungs. In short, excess of oxygen hinders, deficiency favours, the development of the bacillus. In this way the multiplication of the bacillus is accounted for; the way in which it penetrates into the pulmonary parenchyma in patients of all ages who are affected with aortic aneurism, remains to be shown.

Lately it has been found that ulcerative endocarditis, or even simple endocarditis, with vegetations is caused by a staphilo-coccus; rarely by a strepto-coccus; more rarely still by the tubercle-bacillus. The analogies between endocarditis

and endarteritis allow us to suppose the existence of an endarteritis, due to the presence of a microbe. Are the lesions that affect the internal and middle coats of an artery which has undergone aneurismal dilatation caused by a bacillus? If this question is answered in the affirmative, one can easily explain how the bacillus is washed away from its position in the aneurismal wall to the lung, and there multiplies.

In the treatment of aneurism, M. G. Sée relies on iodide of potassium; its mode of action he explains as follows:

(1) It relieves the dyspnœa due to catarrhal affections of the bronchial tubes by liquefying the effused secretions.

(2) It aids the intra-pulmonary circulation, and diminishes venous stagnation.

(3) The volume of the aneurismal tumour is diminished by contraction of the adventitious coat and the tissues surrounding it.

(4) By reducing the size of the tumour, the pressure on the adjacent nerves is relieved, and pain therefore mitigated.

M. G. Sée gives the iodide in the amount of thirty grains daily, divided into three doses, to be taken at the beginning of a meal.

For the relief of pain he has found subcutaneous injections of antipyrin most efficient. When a cardio-vascular tonic is required, he has obtained good results from sulphate of sparteine, and rejects altogether caffeine and digitalis.—*Bulletin de l'Académie de médecine*, August 14th, 1888.

J. Michell Clarke, M.B.

THERAPEUTICS.

Primary and Secondary Drug-action.—In the *Practitioner* for April and May, 1888, Dr. B. Reed discusses this question, and quotes evidence from numerous authorities to show that at least a considerable number of the most prominent sedative drugs have, in certain doses, a primary stimulant action. He says: "I have investigated a large number of others, and find, so far, no exceptions to the induction of Schultz and Peiper, that all paralysing agents primarily stimulate." Again: "The same principles doubtless hold good with regard to the other drugs imperfectly classified according to some of the most conspicuous effects of their physiological doses—as emetics, purgatives, expectorants, diuretics, &c. At all events, so far as my investigations have gone, there is always to be found a relatively small dose which will produce an effect opposite to that of a toxic dose. This is notably true of the purgatives, two of which, rhubarb

and castor oil, have long been used for the cure of diarrhœa. These truths, if clearly demonstrated, are highly important, and merit attention. They have been recognised, and either hinted at or enunciated in a more or less complete form, by numerous authors, including many eminent pharmacologists." The practical outcome of a knowledge that medicines possess two opposite actions, either of which may be curative, is that our power of successfully treating disease will be largely increased.

The paper concludes with an illustrative case, in which the above principles were turned to a practical account. A child of thirteen had an attack of typhoid fever, accompanied by profuse diarrhœa, which bismuth, opium, and lead failed to control. As a last resource, podophyllin, in doses of $\frac{1}{120}$th of a grain every third hour, was given. After the third dose improvement commenced, and the diarrhœa was checked completely in twenty-four hours. During convalescence a severe relapse occurred, in which podophyllin now failed. Fowler's solution, however, in doses of $\frac{1}{8}$th of a drop every two hours, succeeded admirably.

[While yet a student I was so much struck, when reading works on Therapeutics, with the evidence of the different action of certain drugs in large and small doses, that I read a paper on "Therapeutic Action" to the St. Mary's Hospital Medical Society, in 1876, in which, after quoting much evidence from various authorities in favour of the existence of this double action, I concluded by suggesting that *all* drugs have the power of causing opposite effects in large and small doses; and, further, that the small doses would be found to have decidedly curative powers in suitable cases, and that thus we should add largely to our present stock of trustworthy remedies. In a case of diarrhœa, accompanied by severe colic and vomiting, due to cold, and which had continued for two days, I ordered a teaspoonful every half-hour of a weak infusion of colocynth pulp. Within four hours, the pain, sickness, and purging had ceased. This certainly appeared to be an instance of *propter hoc;* but if similar experiments were oftener tried, it would be possible soon to arrive at the truth.]

Pharmacology of Arsenic.—In the *Canada Medical and Surgical Reporter*, April, 1888, is a paper by Dr. J. Stewart, discussing some of the points in connection with this subject. Discussing the cause of the gastro-intestinal symptoms, he says: "The well-known fact of over-doses of arsenic in bringing about profuse watery stools (closely resembling those

seen in Asiatic cholera) is generally explained on the, at first sight, very plausible assumption that, being a powerful irritant, it sets up a severe gastro-enteritis. Now, I believe it is very exceptional for it to bring on this severe inflammatory action. There is no doubt the drug is a powerful escharotic; but it is too slow in its action to account for the sudden and great vomiting and purging which follow its ingestion."

He then gives details of four *post mortems* in cases of arsenic poisoning, in which there was no evidence of inflammation in the stomach and intestines; and says that death was due to great dilatation of the abdominal arterioles, resulting from paralysis of the splanchnic nerves, and causing, secondarily, a sudden and great lowering of blood-pressure in the whole vascular system. The result of this upon the brain causes in rare cases the so-called "arsenicismus cerebro-spinalis," in which deep coma comes on rapidly and proves fatal. The recognition of this cause of death is an all-important factor in the treatment. The pressing indication in such cases is to raise the fallen pressure; for, as in Asiatic cholera, death is brought about by the immense serous loss from the blood. He recommends, therefore, hypodermoclysis of ℥vi. to ℥x. every two or three hours, of a saline solution (common salt, 4; sodium carbonate, 3; and water, 1000).

Phenacetin is a white crystalline substance, analogous in composition to antifebrin (acetanilide); inodorous and tasteless; sparingly soluble in water, but more freely in glycerine; insoluble in acid and alkaline liquids, with the exception of glacial acetic acid. With sulphate of copper it gives a green colour, and with perchloride of iron a red. In five-grain doses it reduces febrile temperatures four or five degrees. Except in one instance, where the urine became darkened, no untoward results have been observed. Its action begins to be manifest within half an hour of its ingestion. The patient generally perspires freely and feels drowsy. Sleep often follows, and pain is relieved. Children bear the drug well. Like antipyrin, it has been found useful in neuralgia, rheumatism, and in certain cases of vomiting.—*London Medical Recorder*, April, 1888, and *Practitioner*, May, 1888. ARTHUR B. PROWSE, M.D.

OPHTHALMOLOGY.

Notes from the Seventh International Ophthalmologicial Congress.—The meeting of the Congress was held in Heidelberg from the 8th till the 11th of August, during a week of splendid weather, under the auspices of the

Ophthalmologische Gesellschaft (the oldest society devoted to this branch of science), which, at the same time, celebrated its twenty-fifth anniversary.

Professor Donders, who has just resigned, at the age of 70 years, the Chair of Physiology at Utrecht, was a most fitting president.

The meetings were held in the Aula of the University, which had been splendidly decorated in the year 1886, on the occasion of the five hundred years' Jubilee. Demonstrations were also given at the Eye Hospital. Some eighty papers were read, and four special discussions were held.

1. "The Cause and Treatment of Strabismus."—The debate on this subject, opened by MM. Landolt (Paris) and Raymond (Turin), contained little beyond the former's communication at the International Congress at Washington last year; and the results of the debate opened by Snell at the British Medical Association meeting held in Dublin. The aim of treatment is to procure binocular vision. All the non-surgical means at our disposal should be exercised before operation is recommended; and the method and extent of the operation must be based upon a careful consideration of the peculiarities present in each and both eyes, even if merely a good permanent cosmetic effect is to be attained. Most of us have experienced the disappointment of seeing a squint outward result some time after a division of the internal rectus, which at first seemed to give a perfect result. The division of a tendon is the destruction of power, which can never be perfectly regained. The more experience I have of muscular advancement, the more confidence I feel in the value of its application.

2. "The Operation of Cataract."—M. Gayet (Lyons) gave a masterly *résumé* of the subject, the most debatable part of which centres in the statements: "Iridectomy is not necessary, it is rarely of use; as far as possible it should not be an incident in the operation (*un incident operatoire*); if it is done, it should be foreseen. . . ." To remove the remains of the cataract, no instrument must be introduced into the anterior chamber; washing out with a gill of water thrown upon the wound, and which enters and forms eddies in the anterior chamber, alternating with massage, suffices for removal of all *débris* and leaves the pupil quite clear. . . ." "A corneal suture may be indicated. . . ." "Incarceration of the iris is the one accident of this method; the others amount to nothing. . . ." "Opacity of the capsule is a frequent result—one

always to be dreaded; secondary operations are full of uncertainty and of danger."

Both in England and on the Continent the very large majority of oculists had adopted the method of Von Graefe, viz., peripheral linear incision of the cornea, combined with iridectomy; but a few experienced operators (Augustin Prichard among them) continued the use of the old flap operation, or some modification, by which the iris is left intact, and the great advantages of a movable pupil are retained. During the late year or two a very marked reaction has taken place in favour of operating without iridectomy. The new school relies much on the prevention of prolapse by use of myotics, and on the improved results under strict antisepsis in the prevention of inflammation of the wound and of the iris, although the latter may have been over-freely stretched at the time of the delivery of the lens, and even bruised in its replacement through the corneal wound into the anterior chamber. Under the liberal use of eserin, the pupil contracts and helps to prevent the after prolapse of the iris through the wound. Despite all precautions, however, the tendency to prolapse is very great, and incarceration had certainly taken place in most of the cases that I had an opportunity of seeing in the clinic of one of the leading advocates of this method.

None would deny the advantage of retaining the perfect pupil, but in endeavouring to do so the risks of prolapse are enormous; whereby the sound pupil is spoiled, healing is seriously prolonged, and the resulting anterior synechia is an ever-present source of danger.

The results communicated to the Congress by Knapp (the first hundred cases are reported in the *Arch. of Ophthalm.*, Vol. xvii., No. 1, 1888) show that he has brought extraction without iridectomy to great perfection; and Schweigger is also a warm advocate of the method. Prof. Hirschberg, whom I thought a year ago to be opposed to it, tells me that he also is now in its favour. In the face of the opinion of these authorities, and of Sattler and others scarcely less weighty, I should expect the question pertinently asked by Anderson Critchett, in his remarks in the debate ("Which would any of us, himself the subject of cataract, select as his friend to extract the lens? One well versed in the method without iridectomy, or one who would perform iridectomy as an essential part of the operation?"), to be answered by a large majority in favour of the latter procedure. There is another important point: Knapp, in his cases, used very freely and frequently a secondary operation for opaque

capsule; this, Gayet urges, is a dangerous operation; and in a conversation I had with Snellen, he spoke very strongly of his dread of the apparently slight operation of discission. I think he would have argued that opaque capsule is more likely to follow extraction without iridectomy, than where iridectomy is done; and that, therefore, it is safer to do iridectomy, in that the necessity for a secondary operation is thereby lessened. Knapp, on the other hand, although he lays stress upon the dangers of careless interference, especially in cases of pseudo-membranes following iritis or irido-cyclitis, is a strong advocate of further interference, so as to give the best possible acuteness of vision. My own feeling is that discission or some form of capsulotomy is safer and more easily made available where a coloboma exists. The time is rapidly approaching when the advantages and disadvantages of the iridectomy as a part of the operation for extraction of cataract will be warmly contested, and the report of the proceedings of our Congress will contain weighty arguments in favour of a return to the flap operation.

A story is told that a well-known English oculist said to Knapp, "So you have not yet given up extraction without iridectomy?" To whom the latter said, "And you have not yet commenced to do it."

3. Priestley Smith's communication on "Glaucoma," to the elucidation of which he has devoted so much thought and mechanical intelligence, was most enthusiastically received. I append his abstract on the **Pathology** of the disease:—

"Glaucoma consists in an excess of pressure within the eye, *plus* the causes and the consequences of that excess. Pressure is an essential factor. (A glaucoma without increased tension is probably a glaucoma examined during the intermissions of increased tension).

The pressure of the intra-ocular fluids is determined by three conditions:

a. The condition of the secreting organs.

b. The condition of the outlets.

c. The condition of the fluids themselves.

The aqueous and vitreous fluids are secreted by the ciliary portion of the uveal tract. The aqueous escapes at the angle of the anterior chamber (filtration angle). The vitreous fluid escapes at the papilla, very slowly as compared with the aqueous. Any surplus fluid in the vitreous can pass easily, in the healthy eye, into the aqueous chamber. The condition of the papilla cannot have much influence on the intra-ocular pressure. An albuminous fluid escapes from the anterior

chamber much less rapidly than a normal salt-solution under the same pressure.

The chief factors which can raise the intra-ocular pressure are therefore: *a*, hypersecretion by the ciliary processes; *b*, obstruction of the filtration angle; *c*, serosity of the fluids.

a. Hypersecretion is sometimes the exciting cause of the attack, but the glaucoma-process cannot be explained by the hypothesis of a persistent hypersecretion.

b. Obstruction at the filtration angle is present in most cases of glaucoma; the angle is compressed or closed. Experiment proves that, when the iris-base is pushed forwards, filtration is greatly retarded. It is true that the filtration angle is sometimes closed in eyes which have no glaucoma, but in such eyes there are other changes which render glaucoma an impossibility; the fluid escapes by abnormal outlets, or it is no longer secreted.

c. Serosity of the fluids is present in many forms of glaucoma. It is a very important factor in the secondary glaucoma of serous iritis and kerato-iritis; in these cases the filtration angle is widely open and the chamber deep.

In most forms of glaucoma the filtration angle is closed. What are the antecedent changes? When they are invisible, we call the glaucoma 'primary'; when they are visible, we call it 'secondary.'

In certain forms of *secondary glaucoma* we can see the manner in which the filtration angle is closed. In every form, except those in which the aqueous chamber is distended by serous fluid, the iris-base is found on dissection to be pushed forwards against the cornea.

In *primary glaucoma* of recent date, dissection shows the iris-base pushed forwards by the swollen ciliary processes, and in many cases the processes are themselves pushed forwards by the lens and zonula.

a. The chief predisposing cause is an insufficient circumlental space. Thus the liability to glaucoma increases with age, because the lens grows larger as life advances. Again, the liability is greater in the hyperopic eye, because the ciliary muscle and processes are more prominent in the direction of the lens. Again, a small cornea appears to predispose to primary glaucoma: in 227 persons measured with a special keratometer the average horizontal diameter of the cornea was 11.52 mm; in 52 persons suffering from primary glaucoma in one or both eyes it was 11.02 mm. A cornea measuring 10.5 mm., or less, is exceptional; among the unaffected persons it was found in about four per cent., among affected persons in 31 per cent. It is at present uncertain

whether the small cornea of such eyes is a congenital peculiarity or a senile change. (The investigation is not yet completed.)

Senile changes in the vitreous which obstruct filtration into the aqueous chamber are perhaps among the predisposing causes. Perhaps, also, in minor degree, senile rigidity of the sclera and senile degeneration of the blood-vessels.

b. The chief exciting causes are those conditions which overfill the uveal tract with blood. General disturbances which depress the circulation and overfill the venous system are the usual antecedents. The ciliary processes swell and, by reason of the insufficient circumlental space, push forward the iris-base and compress the filtration angle. Obstructive phlebitis would do this, but there is no evidence that this is a common antecedent of glaucoma.

Atropine, under predisposing conditions, excites glaucoma by thickening the iris-base.

Glaucoma aggravates itself, because increasing pressure on the choroidal veins causes increasing congestion of the ciliary processes and increasing compression of the filtration angle.

The anatomical predisposition and the vascular disturbance are complementary to each other in varying proportions. Acute glaucoma presents the maximum, chronic non-congestive glaucoma, the minimum of vascular disturbance."

Snellen, from his large clinical experience and operative ability, was well chosen to introduce the question of the **Treatment** of Glaucoma, in which he advocated a new departure, or at least a further development and modification of De Wecker's views. He insists on the necessity for continuous use of myotics, and believes that sclerotomy is far preferable to iridectomy, by leaving the contractile action of the pupil unimpaired. He simply makes a sclero-corneal incision with a Jaeger knife. The suggestion is especially interesting if taken in connection with the recent views against iridectomy in the treatment of cataract already alluded to. He says:

"From the clinical standpoint, glaucoma posterius (relative overfulness of vitreous chamber) must be strictly distinguished from glaucoma anterius (relative overfulness of anterior chamber: iritis serosa, keratitis diffusa).

In *glaucoma posterius* myotics tend to reopen Fontana's spaces by stretching the iris and contracting the meridional fibres of ciliary muscle. They excite the circulation.

In *glaucoma anterius* myotics are prejudicial by extending the surface of the iris and by provoking pupillary adhesions.

Mydriatics act in the opposite way.

Sclerotomy is indicated in all cases of increased tension (hypertonus); it benefits by evacuating serous fluids, loosening peripheral or pupillary iris-adhesions and readmitting the impeded circulation.

The direct thrust of the iridectomy-knive involves less danger of prolapse of the iris than the cut from within outwards of the cataract-knife.

Myotics are a *sine quâ non* in performing sclerotomy. The myotic contraction of the iris prevents prolapse; the contraction of the uveal tract *in toto* promotes the outflow of the fluids, and diminishes the pressure of the choroid against the sclera.

The myotic contraction of the meridional fibres of the ciliary muscle stretches Descemet's membrane, distends the inner mouth of the sclerotomy-wound, and promotes the formation of new channels to Schlemm's canal.

Excision of the iris is a subordinate part of the glaucoma-operation; but it is indicated when the iris tends to prolapse, and when the aqueous humour is retained behind the iris.

The divided sphincter of the iris stretches the iris-periphery less effectually than the undivided sphincter. Sclerotomy without iridectomy permits repetition of operative treatment.

Impending hypertonus should interdict all straining of the accommodation. Schoen's theory is a valuable attempt to find the primary cause of hypertonus in the function of the eye.

Although the details of Schoen's explanation seem objectionable, it may prove true that straining of a diminished accommodation is a cause of glaucoma.

When the elasticity of the lens is lost, contraction of the circular fibres of the ciliary muscle would relax the suspensory ligament, and this relaxation would tend to a forward movement of the lens and ciliary processes.

In glaucoma perfectum, extirpation is indicated by impending pain, and because of its occasional association with intra-ocular tumour.

Extirpation is preferable to exenteration; among other reasons, in the interests of pathological examination."

4. Leber's (Gottingen) paper on "Signification of Bacteriology in Ophthalmology" comprises years of work by one who is, perhaps, the greatest living authority on Ophthalmic Surgery; and, together with Sattler's (Prague) communication, should be studied in full, not only by specialists, but

by all who are interested in the association of septic agencies with disease.

Space only admits of our thus briefly noting the four main subjects of discussion. A complete account of the proceedings of the Congress will be published in due time.

The town of Heidelberg was *en fête* and gaily decorated in honour of the Congress.

Some two hundred and fifty oculists registered their names. About twenty were Americans, and eleven represented this country: Critchett, Nettleship, Gunn, and Jessop (London); Argyll Robertson, and Berry (Edinburgh); Swanzy (Dublin); Little and Hill Griffith (Manchester); Priestley Smith (Birmingham).

The social side of the Congress was well maintained; Professor Becker was profuse in his hospitality. The arrangements included evening receptions in the "Schlossrestauration" and the "Stadtgarten." The dinner was held in the Sanatorium, near the Schloss, and was attended by the Burgomeister, the Rector of the University, and many ladies. The usual speeches were made between the various courses.

The Congress was closed by a boat excursion on the Neckar, from Ziegelhausen, together with a grand illumination of the Old Castle, and fireworks, arranged by the city of Heidelberg.

The executive of the Congress were Otto Becker, Hess (Mainz), Stilling (Strasburg), and Bernheimer; and they are to be congratulated on their successful efforts.

The city of Edinburgh has been chosen for the next International gathering of Ophthalmic Surgeons in 1894.

F. Richardson Cross.

SCRAPS

PICKED UP BY THE ASSISTANT-EDITOR.

Holding On.—The story comes from the West of a man so tenacious of lucre, that when he swallowed a five-dollar gold piece, the stomach-pump could only bring up $4.50.

Truth through Error.—It is said that a busy doctor sent in a certificate of death the other day, and accidentally signed his name in the space for "cause of death." The registrar says he wishes the profession would be as accurate generally.—*Journal of Reconstructives.*

Counter-Irritation.—A sad-looking man went into a drug-store and asked the druggist if he could give him something to drive from his mind thoughts of sorrow and bitter recollections. The druggist nodded, and put him up a mixture of quinine and wormwood and rhubarb and Epsom salts, with a dash of castor oil, and gave it to the man; and for six months he could not think of anything except new schemes for getting the taste out of his mouth.—*The Medical and Surgical Reporter.*

"The Chief."—Those who are acquainted with the history of antiseptic surgery, and with the not very remote traditions of the Edinburgh school, will have no difficulty in identifying the subject of the following lines taken from Mr. W. E. Henley's *A Book of Verses*, to which a subscriber has called my attention:

> "His brow spreads large and placid, and his eye
> Is deep and bright, with steady looks that still.
> Soft lines of tranquil thought his face fulfill—
> His face at once benign and proud and shy.
> If envy scout, if ignorance deny,
> His faultless patience, his unyielding will,
> Beautiful gentleness, and splendid skill,
> Innumerable gratitudes reply.
> His wise, rare smile is sweet with certainties,
> And seems in all his patients to compel
> Such love and faith as failure cannot quell.
> We hold him for another Herakles,
> Battling with custom, prejudice, disease,
> As once the son of Zeus with Death and Hell."

"Plo Medinels."—Some extraordinary specimens of "English as she is wrote" may be picked up at the Italian Exhibition at Earl's Court. Many of the exhibitors, with a view to recommending their wares to the British public, distribute amongst visitors circulars which pretend to be printed in our difficult language. The spelling and grammatical construction of most of these documents are open to hostile criticism; but, of all the circulars which we have succeeded in collecting, none contains more amusing faults than the pentaglot pamphlet which lauds the virtues of Dr. A. B.'s pills. We call the pamphlet a pentaglot inasmuch as it includes versions of the same statements in English, French, Spanish, German, and Italian. But its title-page is printed in Volapük, and is headed "Plo Medinels"—which, we suspect, means "For Medical Men." It should be equally appreciated by lay people.

The English section of this astonishing pamphlet begins with an extract from a paper—the translator calls it a note—which was read in 1887 before the Royal Lombard Institute of Science by Professor Joseph Sormani. "In this note," it is explained, "the eminent physiologist abridges the final results of his experiences made with the knowest antiseptics on the microbs

of tubercolosys." After lightly touching on his experiments "made in gelatinous cultures, also against the tenaceous pathogen Koch's bacillus," the Professor is made to say: "at the rate of the easiness of its affording, of its solubility, and of its efficacy, the use of 'B.'s' pills is very recomended, at the dose of 4—10 pills in twenty-four hours." Dr. R. Guaita's translated testimony follows. "Therapeutics," says this authority, "must have the highest acknowledgment to A. B." The drug, "which is quickley decomposed by its very easy oxygenation, has been reduced by the inventor in form of pills covered with a thik sheet of resin, which, preveting the oxydation of the medicament, let the pill a long while unalterable. It is that the chief worth of this new pharmaceutical preparation." A pebble would have the same virtue. "The pills," continues Dr. Guaita, "melt easily in mouth, and have not disagreable taste, they are fortifying, make easy in extraordinary manner the expectoration, reduncig the muco-catarrhal secretion of the mucosa. Whence, their general use in the disease of the aerial tree, the larynx, the weasand, and the bronchiae." Dr. Guaita uses the pills "in the infantine Hospital directed by myself," especially in cases of "the retarded decision of pulmonite, the bronco-pulmonite, and generally in all the bronchio-pulmonary infirmities derived from the measles, the chin-cough," &c.; and has found that, after using them, "the breath was franker, the emphysema was sconjured, the tonicity generally returned to the large mucosa of the bronchio-pulmonary tree." Professor Tamburini, of Milan, says that the pills have given good results, even in "cases of lungs cavernity or cells." Professor Strambio thinks that "the renom" of the pills is merited. "The act of expectoration," he says, "is slight and long, and is not accompanied by feelings of loathing." The pills, he concludes, "must be carefully taken into consideration, and for that reason we warmly recommend them to all doctors." Dr. Luigi Casati, of Forli, is quite enthusiastic in his praises of the pills. "These pills are easily dissolved by the sole action of the saliva, and leaves a pleasant balmy taste which does not at all give disgust." We are told, incidentally, that the pills are used by "the director of the Clinical Poliambulance of Milano;" nor do we wonder at it, for Dr. Casati is hopeful "that they wil promptly sobstitute simple tar pearls, pastiles, pills, waters, and so many other preparations of any therapeutic valour." "Against a regular request made on a legal paper," the proprietors promise to send "a certain number of boxes" of the marvellous pills "for the opportune experiences." "The same firm, in order to publish shortly a large and particularized study on the terapeutical action" of their drug, "to which attend an eminent italian Physician, very well known for others important studies, beg ardently all the Physicians who experiments this new medicament, to communicate it the results of their tastes." The British public is, no doubt, anxious to know of a pill which, while reduncig the muco-catarrhal secretion, benefits the weasand, and, according to the knowest experts, fortifies the aerial tree in cases of pulmonite, lungs cavernity, and chin-cough; but a somewhat simpler statement of the virtues of Dr. B.'s medicine would have been welcome. We await with curiosity the publication of an English version of the large study to which attend an eminent italian Physician.—*St. James's Gazette.*

Dr. Von Mosetig-Monbrof, speaking at the Vienna Medical Congress, showed himself to be possessed of great originality in one thing—his bold and unique treatment of the English language. He quoted the following as Lister's statement of his "fundamental satze": (1) "Let the wound to be alone;" (2) "Let the wound to be protected;" (3) "Let to the wound her free discharge." This interesting specimen of "English as she is spoke" by Sir Joseph Lister will doubtless surprise many people; not least, we should imagine, Sir Joseph Lister himself.—*The Hospital.*